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JUNE 2
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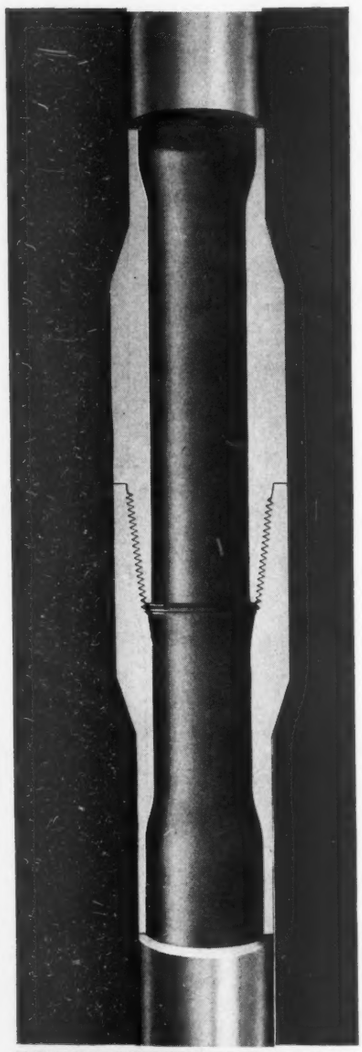

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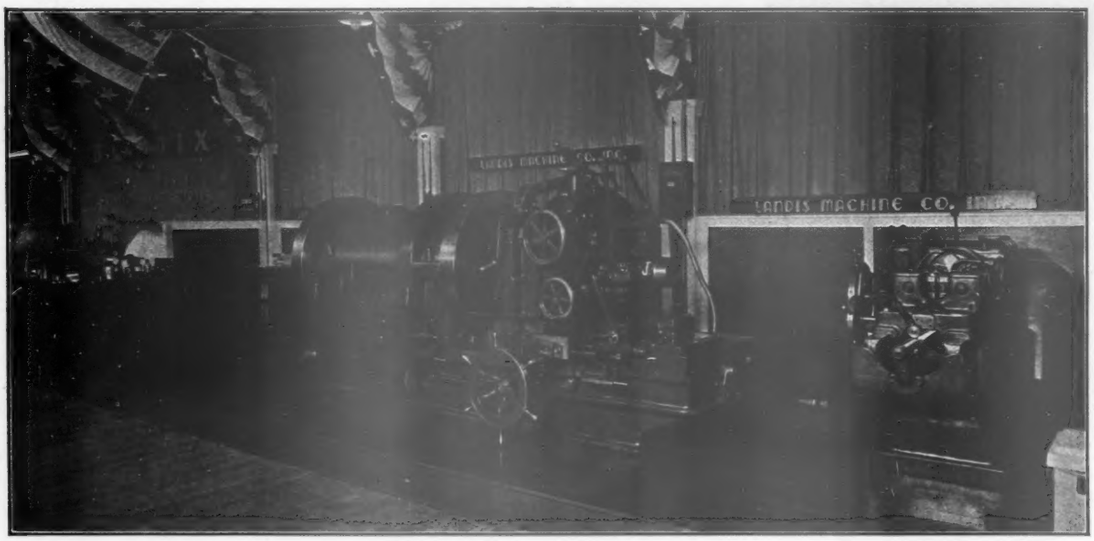

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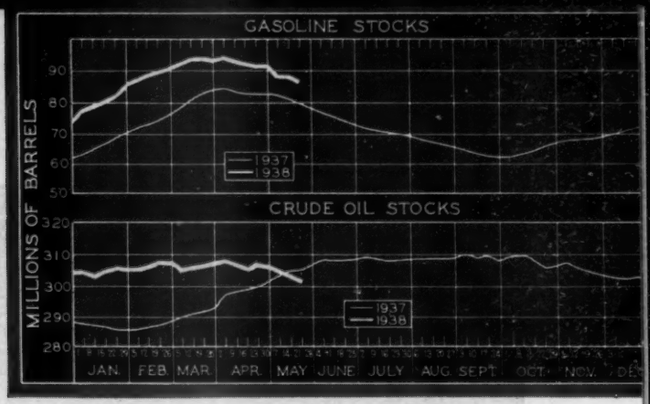


Fifth Week of Reduced Output

A DECLINE in crude oil output for the fifth successive week has brought production to the lowest level since December, 1936, and more than 400,000 barrels under the daily average for the corresponding week of last year. The five-week reduction totals 318,000 barrels daily, representing one of the most drastic cuts ever made effective for a corresponding period.

CRUDE PRODUCTION *3,109,287 barrels daily average—down 54,996 barrels.*

CRUDE STOCKS *302,597,000 barrels as of May 21—down 1,601,000 barrels.*

GASOLINE STOCKS *87,992,000 barrels as of May 21—down 655,000 barrels.*

REFINERY RUNS *3,225,000 barrels daily week ending May 21—up 55,000.*

Plans of state proration bodies for June indicate further reduction may be made effective this week with the average output for the month certain to be under the May figures. Proration officials in Oklahoma, which failed to keep its output down to the May allowable, are strongly supporting a program looking to a drop in the state's production to around 400,000 barrels daily this month. Texas will continue the Saturday and Sunday shutdowns, and reductions or continuation of former allowables will be made effective in other states.

California, whose proration programs are carried out entirely on a voluntary basis, is yet to accomplish an objective of balancing supply with demand, taking into consideration a needed reduction in stocks accumulated since the first of the year. Its production of 679,450 barrels daily last week is considered from 50,000 to 75,000 barrels daily higher than it should be during June, according to those in touch with conditions.

From the standpoint of inventories these large cuts in crude supply have been reflected principally in crude storage at tank farms. With the Saturday shutdown in Texas fully effective, crude oil stocks east of California were reduced at the rate of 244,000 barrels daily during the week ending May 21, according to Bureau of Mines reports.

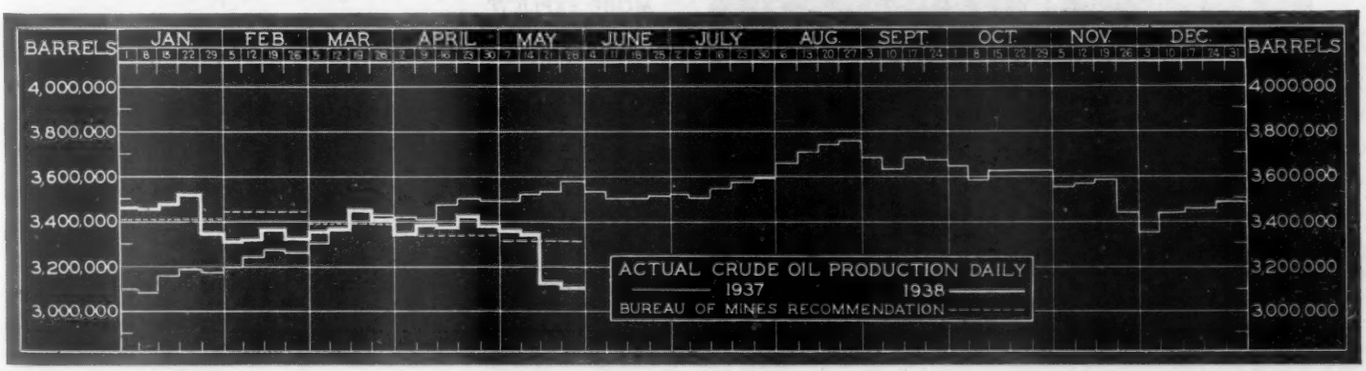
A.P.I. reports for the same week show gasoline stocks were lowered 93,000 barrels daily. Stocks of fuel oil and gas oil increased 270,000 barrels daily.

Statisticians are pointing to these data in explanation of the fact that while there is a better feeling in regard to the crude situation there is no improvement of a definite nature in refinery markets. These observers contend that reductions in crude supply should be carried through to the refinery operations so that gasoline stocks will be reduced at a more rapid rate and the swift gains in stocks of heavy oils stopped. They do not feel there is any pressing need for large reductions in crude stocks at this time, already lower than they were a year ago. They are hoping that refinery revenues can be expanded over the next few weeks to the point where they bear the proper relationship to crude oil and other operating costs.

Daily Average Production for Week

	May 28 1938	Bur. Mines May est.	May state allowable	May 21 1938
Oklahoma City	92,050	.....	.....	103,200
Fitts	42,225	.....	.....	48,675
Remainder of state	305,325	.....	.....	319,450
Total Oklahoma	439,600	510,300	405,000	471,325
East Texas	362,869	.....	.....	362,248
West Texas	177,227	.....	.....	177,050
North Central Texas	101,936	.....	.....	101,748
Texas Panhandle	70,390	.....	.....	70,250
East Central Texas	96,310	.....	.....	96,200
Gulf Coast Texas	295,497	.....	.....	295,589
Southwest Texas	91,229	.....	.....	90,550
Total Texas	1,195,458	1,322,500	1,139,638	1,193,635
North Louisiana	78,460	.....	.....	77,095
Gulf Coast Louisiana	177,598	.....	.....	176,600
Total Louisiana	256,058	243,200	251,450	253,695
California	679,450	667,800	624,735	692,500
Kansas	143,550	168,700	160,000	155,450
Arkansas	41,520	44,500	.....	42,135
Eastern fields	142,900	139,800	.....	142,500
Michigan	53,241	52,600	.....	53,973
New Mexico	88,560	103,900	91,000	93,560
Rocky Mountain area	68,950	64,800	.....	65,510
Total United States	3,109,287	3,318,100	.....	3,164,283

Decrease, 54,996 bbls.



SPARKS FROM THE NEWS

CLEANLINESS FIRST

With the tourist season now underway reports indicate that oil companies which can persuade their now independent oil dealers to maintain clean stations will get most of the business.

117 M.P.H.

Each year better motor fuels and lubricants are used to establish new speed and endurance records on the Indianapolis speedway. The race Monday broke all records.

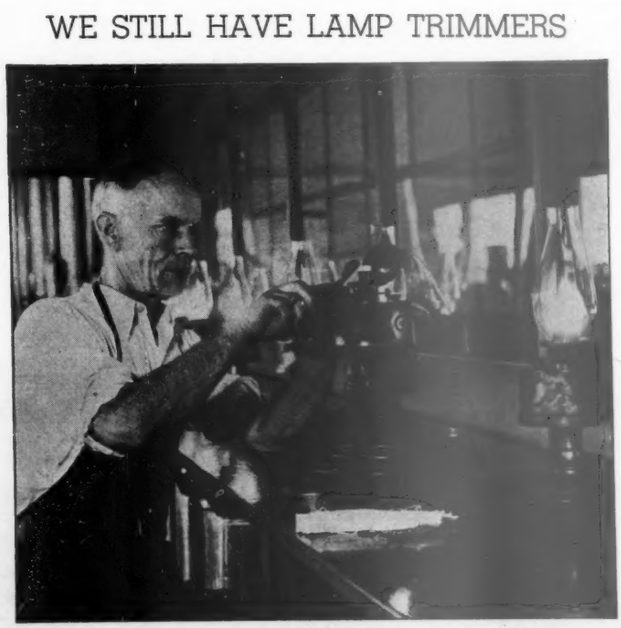
SOUR PROPHECY

A state official recently said the era of discovery in Oklahoma was in the past. Oklahoma wildcats have been busy giving rebuttal evidence since then, four opening new oil pools and one finding a new gas area.

SMACKOVER LIME

The Smackover lime, which 13 years ago was threatening to break the crude market, is responsible for a new field in Columbia County, southern Arkansas.

WE STILL HAVE LAMP TRIMMERS



Trimming test wicks at Standard of New Jersey laboratory to determine performance of kerosene for which a record demand is now under way in the United States

OH, WELL!

The interpretive departments of oil companies, already busy with proration rulings, social security and other regulations, now have a new 100-page revenue act to wrestle with.

SPEAKING OF JOBS

Speaking of jobs, the maintenance of gas-formation pressures on the 88 square miles comprising the K.M.A. field, now under way, comes within that category.

OBJECT LESSON

Centralia, Ill., operators insisted on more outlets for their crude. They got them along with a 10-cent cut in the price.

VALVE CHANGES

Current inventory data indicate that the industry needs to change some valve settings and pull more on gasoline tanks and less on crude storage.

GIVE AND TAKE

The N.P.A.-sponsored plan of having its members visit each other's refineries is good example of give and take.

RAILWAY OIL

A railway company brought in the largest well of the week in California located in Wilmington area.

HIGH AND LOW

With gasoline demand rising, stocks falling, and the crude situation improving, refiners enter the season of heavy consumption with high hopes—and low prices.

MORE EXPLICIT

Senator Borah says, "Four or five companies are dictating the oil policy of the United States." He should name names so these companies, now unaware of their power and burdened with excess competition, could exercise the control he says they have.

EVERYBODY SATISFIED

Having in mind that four-month trial of the first Madison case, most of the defendants and the government are content with nolo contendere pleas in the pending second indictments.

Changes in Tax Law Will Affect Oil Industry

By JOHN D. HARRIS and ROGER S. RANDOLPH

The new Revenue Act, after seven months of Congressional consideration, passed the House of Representatives on May 11 by a vote of 242 to 89, and became law on May 28 without the signature of the President. This Act, which is effective January 1, 1938, had previously passed the Senate on May 9. It is estimated that it will produce about $5,300,000,000 in revenue.

Certain Oil Taxes Repealed

Perhaps of greatest interest to the oil industry is the repeal of the producers' tax on crude petroleum and the tax on the refining of crude petroleum.

The producers' tax on crude petroleum, one of the so-called "hot oil" taxes, was first imposed in 1934 as an adjunct to Section 9 (c) of the Industrial Recovery Act, which authorized the President to prohibit interstate transportation of "hot oil." The purpose of this tax was two-fold: to pay for the cost of administering the code of fair competition for the petroleum industry, and to help the states enforce their production quotas. The latter was accomplished by requiring from each producer and purchaser of oil full informational returns, calling for the number and location of producing wells, the location and size of pipe and gathering lines, and the source and disposition of the oil produced. This information was made available to state authorities.

The rate, originally 1/10 of 1 cent per barrel, was reduced in 1935 to 1/25 of 1 cent. Though called a production tax, it was levied upon the sale by the producer and was collected by the purchaser who withheld the tax from his payments to the producer. The repeal of this tax is effective on July 1, 1938; that is, the tax will not apply to crude petroleum sold after June 30, 1938.

The tax on the refining of crude petroleum, also a "'hot oil" tax, is a companion tax to the producers' tax and was enacted at the same time for the same purposes. This tax (the rate is the same as that of the producers' tax) is levied upon each barrel of oil refined and upon each barrel of gasoline recovered from natural gas, and is payable by the refiner or processor. Informational returns have been required, giving inventory stocks, daily crude receipts, daily refining consumption, and daily gasoline recovery from natural gas. The repeal of this tax also is effective on July 1 of this year.

These two taxes serve no useful purpose, and provide negligible revenue. In 1937, their total yield was only $894,000, which is less than 4/100 of 1% (.0004) of total Federal collections for the year from excise taxes alone.

The producers' and refiners' taxes must be distinguished from the taxes imposed on the importation of crude petroleum and its derivatives. These import taxes first were imposed in 1932, and are still in effect. The rate is 1/2 per cent per gallon on crude petroleum and all its liquid derivatives except gasoline or other motor fuel (2 1/2 cents per gallon) and lubricating oil (4 cents per gallon). Paraffin and other petroleum wax products are taxed at the rate of one cent per pound.

The proposed tax on fuel oil of 1 cent a gallon (H.R. 3134), introduced by Representative Boland of Pennsylvania in January, 1937, is not included in the Revenue Act of 1938.

Depletion Unchanged

The provisions of the Revenue Act of 1936 regarding oil depletion are carried over unchanged into the new Act despite recommendations of the President and the Secretary of the Treasury last year that percentage depletion be eliminated. The allowance for percentage depletion continues to be 27½% of the gross income from the property, but not to exceed 50% of the net income (computed without allowance for depletion) from the property. Oil producers also retain their option of using cost depletion whenever it results in a greater deduction.

Naturally everyone in the oil industry is anxious to learn of the new corporate tax scheme. Normal corporate taxes are higher this year. The effect of the 1938 Act is to impose a normal tax of 16 1/2% upon net incomes of corporations. Corporations whose annual net income does not exceed $25,000, however, are taxed at lower rates, which range from 12 1/2% to 16%. Corporations earning slightly more than $25,000 also are taxed at effective rates somewhat lower than 16 1/2%. In 1936 and 1937, the rates on all corporations ranged from 8% to 15%.

The effective normal rate upon intercorporate dividends, which ranged from 1.20% to 2.25%, in the 1936 Act, has been increased to 4.95% in the new law.

Undistributed Profits Tax

In addition to the normal corporate tax of 16 1/2%, the Revenue Act of 1938 has retained in modified form the surtax on undistributed profits which was introduced in 1936. This tax has been criticized widely for the reasons that it discourages legitimate business expansion, is based upon unsound economic theory, and burdens the small corporations more than the large ones which normally have greater financial strength. Indeed, many business men feel that it has been at least in part responsible for the current depression.

Recognizing the evils of a steep penalty tax on undistributed profits, Congress finally agreed upon a surtax of 2 1/2% upon corporations retaining all of their earnings. This is the maximum rate for 1938 and 1939. Inasmuch as the old law imposed a penalty tax of from 7% to 27% upon undistributed earnings, it is apparent that the old tax has been emasculated. Thus, a corporation earning $100,000 this year will pay $2,500 for the privilege of retaining all of its earnings. The same corporation in 1937 would have paid approximately $17,500 for the same privilege. Furthermore, the new surtax by its own terms is to last but two years, and will expire at the end of 1939 unless specially reenacted.

Not only has the rate of this tax been reduced in the new Act, but also additional opportunities for avoiding it have been provided. Of course one

The New Tax Bill

Is estimated to raise $5,300,000,000 a year.

Repeals the "hot" oil taxes on production and refining which amounted to $894,000 last year.

Leaves the depletion law and import taxes unchanged.

Fixes the normal corporate tax at 16½ per cent.

Reduces the maximum surtax on undistributed profits to 2½ per cent. Old law ranged from 7 to 27 per cent.

way to avoid the tax entirely is to distribute all earnings to stockholders in the form of a cash or property dividend. But should a corporation not wish to distribute its earnings in this way, several methods of escaping or reducing the surtax are available.

These are as follows:

1. The corporation may pay or set aside money with which to pay any debt in existence at the close of 1937. Monies so used are treated like cash dividends to stockholders.
2. The corporation may distribute to its stockholders its own bonds. The face or market value (whichever is lower) is treated like a cash dividend.
3. The corporation may distribute to its stockholders its own stock. If the stock so distributed is taxable to the stockholders as a dividend, its fair market value is treated like a cash dividend.
4. The corporation may distribute cash contemporaneously with an offer of stock so attractive that all or most of the stockholders will use their dividend checks to subscribe for the new stock offerings. Thus the corporation in effect retains its cash yet obtains the credit.
5. The corporation may offer its stockholders either cash or stock at their option. In this way the corporation can obtain a credit for the amount of cash and the fair market value of the stock actually distributed.
6. If the corporation can persuade all of its stockholders to agree to take up on their individual tax returns a given amount, it can obtain a credit for this amount as if it were actually paid to them.

Furthermore, special relief has been given to corporations whose annual net income does not exceed $25,000. These corporations are completely exempt from the new undistributed profits surtax. Special provisions also exist for corporations earning slightly more than $25,000; these corporations, though not entirely exempt, are subject to a maximum tax of somewhat less than 2 1/2%. Likewise, in certain instances dividends paid in earlier years are regarded as paid in the taxable year. Finally, all corporations are allowed in some instances to carry over net operating losses and accumulated deficits in determining the net income subject to the undistributed profits tax. Thus, a corporation with a net loss in 1938 of $25,000 and net income in 1939 of $40,000 is liable to the tax in 1939 only on $15,000, and can escape it entirely by paying out $15,000 to stockholders.

It is evident that the old penalty tax on retention of earnings, though retained in name and in form, no longer bears its sting. The rate now is quite low, and the ways of escaping it are many.

The principle of this tax has been retained, however, in two other places in the 1938 Act in more drastic form. Section 102 of the Act imposes a surtax of from 25% to 35% upon corporations which accumulate earnings in order to prevent the imposition of the individual taxes upon their shareholders. Although this provision has been in the Revenue Laws for years, it has been invoked but rarely since it is almost impossible to prove an intention on the part of the corporation to shield its shareholders from taxes. The 1938 Act puts teeth into this provision by placing the burden upon the corporation to show that unreasonable accumulations are for legitimate business purposes. Also, Section 401 imposes extreme penalty taxes of from 65% to 75% upon personal holding companies (non-operating companies) which do not distribute their income.

Neither of these penalty taxes is intended to apply to the ordinary operating company, and it is highly probable that most corporations engaged in the oil business no longer need consider their effect in formulating dividend policies.

Much has been written about the proposed tax upon certain closely held corporations, popularly known as the "third basket" levy. This proposal was an excellent example of a tax designed at least in part to regulate business rather than to raise revenue. It was aimed at certain closely held corporations, like the Ford Motor Company, and was designed to force them to distribute their income by means of a 20% penalty tax on retained earnings. This levy, however, would have had but limited application to the oil industry because of the definitions of stock ownership and net income. The Bureau of Internal Revenue itself estimated that not more than 300 to 600 corporations would have been taxable under this provision in any one year.

The proposed levy, after heated debate, was killed in the House on March 11, 1938, by a vote of 233 to 153. This date, insignificant in itself, may have marked the beginning of a return to the sound economic basis of taxation for purposes of revenue only.

Capital Stock Tax

The capital stock and excess profits taxes, reintroduced to corporations by the National Industrial Recovery Act of 1933, are retained in the 1938 Revenue Act. The latter Act, however, allows a readjustment of the declared value of a corporation's capital stock in 1938 and every third year thereafter. At present, the capital stock tax is at the rate of $1 per $1,000 of the adjusted declared value of the capital stock, while the excess profits tax is at the rate of from 6% to 12% on excess profits. As excess profits are determined with respect to the declared value, the interdependence of the two taxes is apparent.

A low declared value means a low capital stock tax but a high excess profits tax, while a high declared value reduces the latter tax but increases the former. The benefit to corporate business in this new provision in the 1938 Act as to readjustments of declared values is apparent. In times of rapidly changing corporate income, as the present, the privilege of readjustment allows those corporate officers who can predict the future of their corporation to reduce their combined capital stock and excess profits tax.

Taxes on Individuals

The 1938 Act makes no substantial changes in personal income taxes other than with respect to capital gains. The normal tax remains 4%, and the surtaxes range from 4% to 75%.

The tax load upon personal capital gains, however, has been lightened. Under the old law, gains from sales or exchanges of capital assets were taxed according to the length of time held. If held not more than one year, 100% of the gain was treated as ordinary income; if held more than one year, the percentage of gain recognized ranged from 80% to 30%, depending upon the length of time the asset was held. Capital losses in excess of capital gains, however, were allowed only to the extent of $2,000.

This method of taxing capital transactions has been criticized almost as widely as the principle of the undistributed profits tax. It is claimed that this method hinders the development of new enterprises as well as the expansion of existing ones. Only those who are willing to speculate dare invest in new businesses. The present tax system imposes heavy taxes on whatever gains these investors may realize, yet limits their losses to $2,000. Many prospective investors, therefore, in recent years have turned to government bonds and other nonspeculative securities. Because of this freezing of capital, its free flow into productive investments is hindered and needed business expansion suffers.

The new Act has remedied this. Under it, if assets are held 18 months or less and then sold, 100% of net gains (after deducting losses during the year from sales of such assets) are taxed. Further relief is afforded in that net losses incurred in the preceding year from sales of such assets may be carried over to offset gains in the taxable year. Thus, one who sells such a capital asset in 1937 for a loss of $9,000 and another in 1938 for a gain of $9,000 pays no tax on these transactions under the new law. Were the old law still in effect, the entire $9,000 received in 1938 would be treated as ordinary income and taxed without regard for the loss in 1937, while the loss in 1937 would be recognized only with respect to the tax for 1937, and then only to the extent of $2,000. Under the new law, however, losses from such assets are not allowable in any year over and above gains from them.

On net gains from assets held more than 18 months and not more than two years, the individual taxpayer has the choice under the new Act either of paying a flat rate of 20% or of adding 66 2/3% of the net gain to his ordinray income. whichever will produce the lower tax. On gains from assets held more than two years, he may either pay a flat rate of 15% or add 50% of the net gain to his ordinary income. It is apparent that usually it will be advantageous for individuals to retain such assets for more than two years in order to obtain the lowest alternative rates. On net losses from assets so held, the government has the option of determining whether the taxpayer deduct 15 (or 20)% of the loss from his tax or deduct 50 (or 66 2/3) of the loss from his taxable income.

An effort of Senator LaFollette to broaden the income tax base by reducing the exemptions for both married and unmarried people and by commencing surtaxes on individuals in lower income brackets was voted down in the Senate Committee. It is highly probable, however, that such a change will be enacted by 1940 if present government deficits continue. Most economists favor such direct taxation over the present method of employing many indirect taxes unknown to the general public yet ultimately borne by it.

Miscellaneous Changes

The annual gift tax exemption has been reduced from $5,000 to $4,000. Thus, a taxpayer now who gives away in any one year more than $4,000 to any one person is subject to the gift tax provisions.

Losses from worthless stocks and bonds no longer may be deducted in full from gross income, but now are subject to the percentage limitations discussed above. Thus no longer is there any advantage to taxpayers in holding stocks until they become worthless rather than selling them for a loss at some earlier time.

Corporations no longer may claim charitable contributions in full as business expenses. Such contributions now may be deducted only to the extent of 5% of the corporation's net income.

Corporate or other taxpayers selling old machinery or other depreciable assets used in trade or business no longer are subject to the old percentage limitations on their sale, but now may deduct such losses in full.

Corporations now must submit in their returns a list of the names of all officers whose annual compensation exceeds $75,000. In previous years, all salaries in excess of $15,000 had to be reported. As this requirement subjects those individuals to many demands for money (the information is available to the public), the change in the 1938 Act will be welcome to many officials.

A provision designed to remove the present exemption from Federal income taxation of interest on United States government bonds, introduced by Senator Borah and at one time in the Senate Bill, was eliminated. Such interest remains free from both state and Federal income taxes.

In conclusion, it may be said that the Revenue Act of 1938 was designed to help business and undoubtedly will do so. The chief changes, of course, are in the undistributed profits and capital gains taxes.

Sutton-Zwolle Oil Co. well blew out while coring at 4,207 feet

SABINE PARISH BLOWOUT SPURS DEVELOPMENT

By George Weber

SHREVEPORT, La., May 31.—North Louisiana's latest field discovery, occasioned by the blowout of a Sabine Parish wildcat, is slated for intensive development in the near future. With six locations staked for immediate drilling, scarcely two weeks after the Sutton-Zwolle Oil Co. Sabine Lumber Co. No. 1 blew out, it is indicated the extent of the new field will shortly be tested.

The interest shown in the area, evidenced by active leasing and early drilling, has enhanced its importance, supported by a sustained production in the discovery well. The wildcat is in the SE cor. of NW NE section 23-7-14, Sabine Parish, in the Blue Lake district. A short distance to the north is the former Blue Lake field, consisting of five shallow wells which produced in the same horizon as the nearby Zwolle field before being abandoned.

A sudden, unexpected blowout was the first indication of the new strike. On May 14, the driller was coring at 4,207 feet with the core barrel on a 3-inch drill stem, using 10-pound mud. Without warning the well blew out, and efficient work of the crew in bringing it under control made a good producer of what might have been a costly wild well.

Immediately following the blowout, the drill stem was raised about 18 feet off bottom, and the blowout preventer with which the test was equipped was closed around the three-inch drilling string. Flow lines from each side of the preventer were run to the mud pits. The well was flowing both through the annular space between the casing and drill stem, and through the core barrel, drilling string and kelly joint, with the drill stem flow showing a higher gas-oil ratio than the casing flow.

Turned Into Storage

After flowing into pits for about 18 hours, the well was turned into storage by opening rams on the blowout preventer and changing connections on the head to two 500-bbl. lease tanks. Then after closing the preventer rams, the kelly joint was broken out with a truck winch and the drill stem collar was set down on the rams of the blowout preventer. After the kelly and rotary table were removed, a 7-inch by 3-inch swage with a 3-inch gate valve was stabbed into the top of the blowout preventer after the drilling nipple had been removed, and the 3-inch valve was closed, shutting off the flow through the drilling string.

Next, two positive choke nipples, measuring one-half and three-eighths inch, were placed in the two flow lines from the blowout preventer hookup to the storage tanks, and the lines to the pit were disconnected and the connections bull plugged. Thus by noon of the following day, the test was under full control and producing into storage.

For the first 18 hours of gauge, the well made an average of 43 bbls. per hour of pipe line oil, ranging from 30 to 50 bbls. at the end of the test period on both the three-eighths and one-half inch chokes. After flowing for a short while on the two chokes, the well was cut into the three-eighths inch choke alone, and the flow was maintained at 41 bbls. per hour for several days through a 125-pound separator. The only pressure gauge was connected to the top of the drill string, and an average pressure of 500 pounds was recorded.

The drilling string was raised about 18 feet off bottom by a winch truck

As soon as the drill stem was raised the rams on the blowout preventer were closed around the 3-inch drill stem

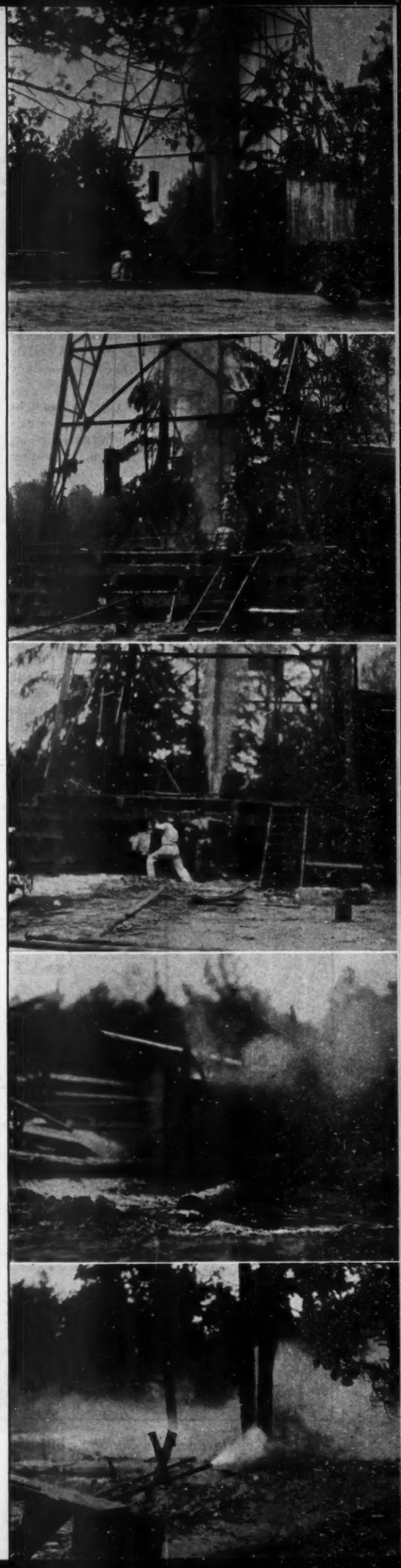
The following week the well was further choked down to a one-quarter inch choke, after showing a tendency to head. Although no accurate gauge has been available, due to constant withdrawals from storage on the site, the flow was not perceptibly decreased by the smaller choke, since the gas-oil ratio declined. No accurate gas-oil ratio has been determined for the well, but it was estimated while flowing on a three-eighths inch choke that the well was making about 1,000,000 feet of gas with 984 bbls. of oil, showing a ratio slightly in excess of 1,000 feet per barrel.

At the present time, seven tank trucks are moving the crude from the limited storage on the well site to tank farms in the Converse and Zwolle fields, whence it is moved by Standard Pipe Line Co. trunk line to Baton Rouge. No plans for a pipe line for the new field are being considered at this time, since such a project will require the completion of additional wells to prove its feasibility.

Due to the fact that the Blue Lake area has never been surveyed by geophysical methods, no shooting picture is available, and the structure of the field is unknown. In the shallow chalk, which produced in the extinct Blue Lake field, and the currently producing Zwolle field, the structure is also relatively indistinct. It consists of a fracture zone, complicated by numerous faults, which preclude the prediction of the field's limits other than by actual oil well completions. Drilling has not definitely limited the chalk, however, and it is be-

Two lines were connected into the blowout preventer and the flow was diverted to the mud pit

The well was placed on two chokes measuring one-half and three-eighths inch, and run to storage, less than 24 hours after the blowout



lieved by some the structure may extend across Sabine Parish and across the state line into Sabine County, Texas.

The Sutton-Zwolle well is bottomed in what is believed may be the top of the Upper Glen Rose formation. This cannot be definitely determined, since the core taken when the well blew out still remains in the core barrel at the bottom of the hole. According to H. D. Easton, who was in charge of the geological work on the well, there is a possibility the top of the Glen Rose was cored at 4,207 feet. This is based on the findings of paleontologists who examined cores which were cut immediately above that level. Reports on those cores show they were either Fredericksburg or Paluxy in age.

There is also a slight possibility the well may be producing from a sand section which previously tested oil at a more shallow depth. Late in February, the test encountered saturation, and a nine-minute drill-stem test made at 3,843-53 feet showed recovery of 1,200 feet of pipe line oil. Casing was set at 3,846 feet, and the well was swabbed without success. Thus there is the possibility that that upper sand is producing the well, although the setting of casing through part of the section, and the unsuccessful results in swabbing tend to make such possibility at this time remote. The crude which the well is now producing averages 34 gravity, however, which is comparable to that tested in the upper sand.

As shown on the accompanying map, the six new locations which have been staked to date will reveal important findings on the possible extent of the field. Aside from the four locations staked immediately to the north, east and southeast of the discovery, the 1½-mile outpost test, Boykin King No. 1 Sabine Lumber Co. in section 19, and the 1½-mile southwest outpost location, A. Reich No. 1 Mansfield Hard Lumber Co. in section 27, will prove interesting developments when they get under way.

It is believed a 40-acre spacing rule may be set for the field, but the issue has not been settled. Some locations are being made to facilitate development on a 20-acre pattern if it is adopted by the conservation commission.

Cardenas' Proposals Give No Hope of Change in Status

While awaiting disclosure of the plan by which Mexico proposes to indemnify American oil companies whose properties were seized by the Mexican government in March interested observers speculated on the probable plans available to President Cardenas and found no hopes for a change in the present status of affairs.

The Mexican proposal was brought to Washington last Thursday by Francisco Castillo Najera, the Mexican ambassador, who has just returned from conferences with President Cardenas. The Mexican ambassador handed the proposal to the United States state department with the request that it be conveyed to the interested companies. The state department reserved decision on transmitting it to the companies pending a complete study of its text. Sumner Welles, undersecretary of state, received the Mexican proposal and conferred for an hour with the Mexican ambassador.

In light of President Cardenas' recent statement that American oil companies would have to accept payment for their properties out of oil, proposing that they handle Mexico's oil traffic and retain 60 per cent of the revenue for liquidation of indemnification claims it was presumed in this country that the official Mexican plan followed these general lines. This method of indemnification, which the oil companies claim is not indemnification at all, has been frowned upon by owners of the properties. It was too early to determine how the state department received the Mexican proposal since none in authority had been given opportunity to study the contents from a standpoint of determining its adequacy.

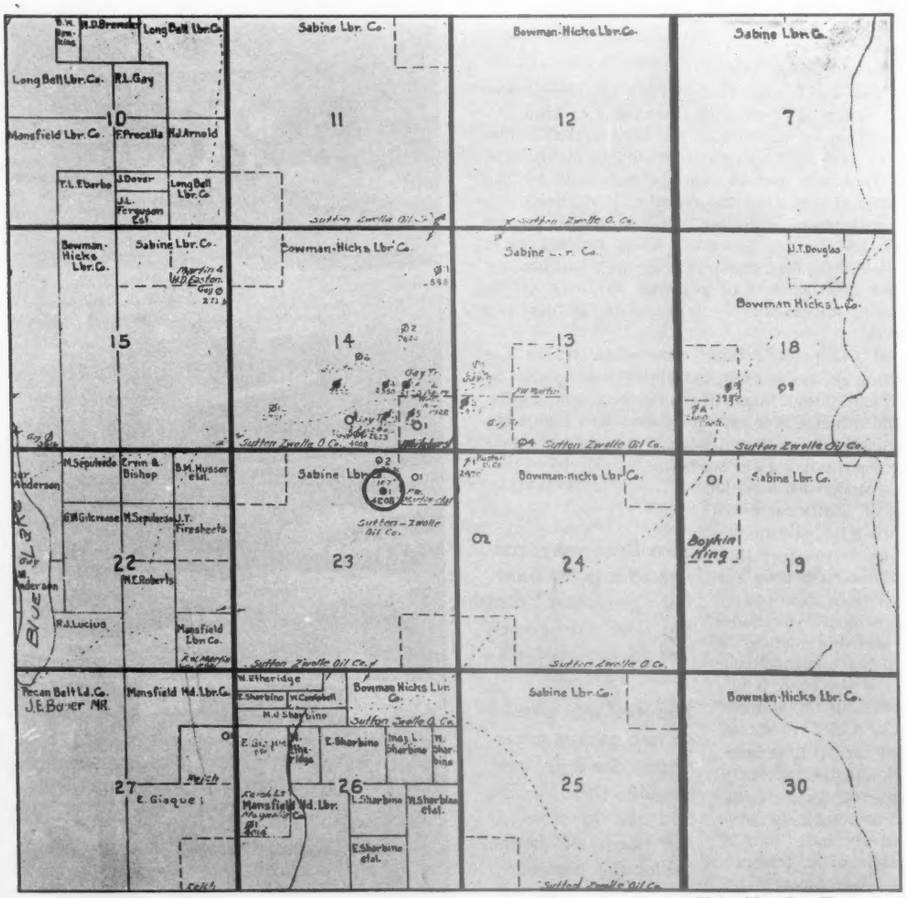
Secretary of State Cordell Hull has insisted that expropriation must be accompanied or followed by compensation. In defining, in statements what sort of compensation he had in mind he has used various phrases. He has mentioned "effective compensation" and "compensation representing fair, assured and effective value to the nationals from whom these properties were taken." He has also expressed hope for "a fair and equitable solution of this problem." The study of Mexico's proposal will be devoted to determining whether it falls within these terms. Mr. Welles promised the Mexican ambassador that a reply would be forthcoming in four or five days as to whether the plan will be submitted to the oil companies.

Meanwhile, the bandit warfare between federal troops and the private forces of General Cedillo centering in San Luis Potosi whose eastern border is only about 50 miles by air from Tampico indirectly brought local attention to the expropriation of oil properties. In leaflets dropped from rebel planes on Tampico, General Cedillo was named chieftain of the movement and proclaimed his authority to impose levies for prosecuting the revolt.

The propaganda matter accused President Cardenas of expropriating the $400,000,000 foreign-owned oil industry in order to involve Mexico in controversy with stronger powers and to hide Mexico's true economic condition.

Outnumbered and under-armed as General Cedillo's forces are, the rebel chieftain is compelled to resort to guerrilla tactics. He is reported extremely anxious to gain control of Tampico, the principal oil port where he might sell oil in exchange for arms and ammunition. Under existing conditions it may develop that the expropriated oil properties will become something more than a pawn between foreign corporations and the Mexican government. They may prove to be an even more dangerous boomerang to the federal government than was originally thought possible.

The Mexican government continues to be blocked in practically all directions in its efforts to dispose of expropriated oil. Without revenue derived normally from oil production taxes, and the necessity of paying workers without benefit of new income from sales it is increasingly obvious that Mexico's strained financial condition will not permit a long expensive campaign with federal troops.



Globe Map Co., Shreveport

The large circle encloses Sutton-Zwolle Oil Co. No. 1 Sabine Lumber Co., discovery well of the new Blue Lake field. The abandoned wells to the north produced from the chalk in the Zwolle field extension

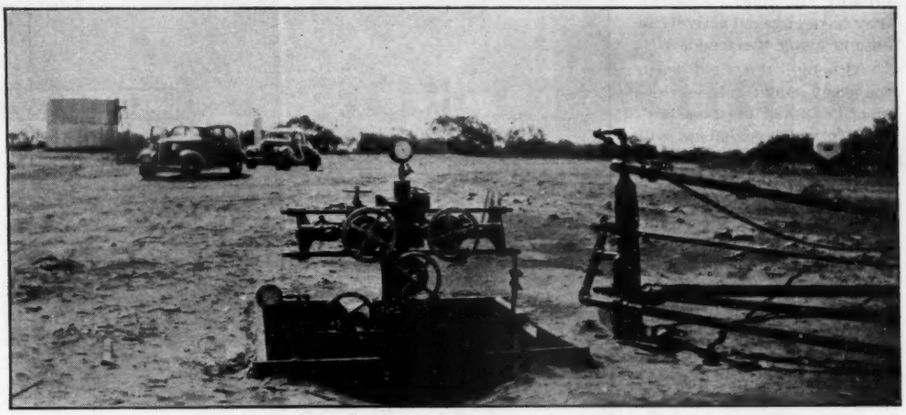
President Merrill N. Davis Addresses A.G.E.M. Convention

WHITE SULPHUR SPRINGS, W. Va. — Addressing leading manufacturers from all parts of the country at the annual convention of the Association of Gas Appliance and Equipment Manufacturers at the Greenbrier, Merrill N. Davis, of Bradford, Pa., president of the association, urged greater sales effort toward the replacement of obsolete equipment in homes as a means of opening up a wide selling market, of giving industry a strong normal stimulus, and making possible a great saving for those investing in modern, efficient appliances.

"If the prospective buyers who could afford it would install modern appliances to replace the aged ones which may still serve their purpose, but are costly to operate, inefficient and unsightly, business would be stimulated, and those investing in modern appliances would realize a substantial fuel saving," Mr. Davis declared. "Because these outmoded appliances still give service, consumers often are not aware of how costly they are nor do they realize that by purchasing modern devices in their place they would receive greater and more dependable service for a smaller output of money."

Mr. Davis added: "The public is becoming aware of the fact that gas is a thoroughly modern fuel when modern equipment and appliances are utilized. The greatest need in the gas industry today is an aggressive offense and the best way of insuring our growth and development is use of sound, courageous promotional plans."

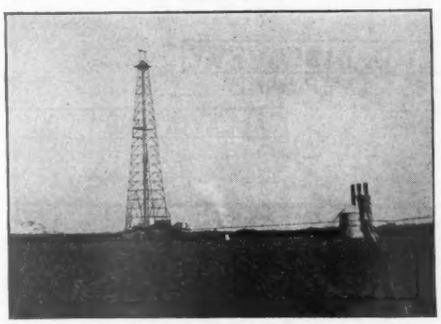
South Alice Opening Play on Jackson Trend



Hook-up of H. H. Howell No. 1 Lindsay and Reed, discovery well

By F. L. SINGLETON

CORPUS CHRISTI, Tex., May 31.—The present drilling campaign in the South Alice field, north central Jim Wells County, is expected to gain momentum as two additional producers have been completed and one outpost test 4,500 feet northwest of production was preparing to test after coring the discovery horizon. The discovery has been looked upon generally as one of the most outstanding discoveries in Southwest Texas and has resulted in an extensive leasing and wildcatting campaign along the Jackson trend.



Cox and Hamon No. 1 Perkins, a semiwildcat, 3½ miles northwest of the field

The discovery is of special interest because it is the second field to be opened from the basal Frio formation along the trend in the past 18 months, and opens a new type of play for the Jackson trend. The field is about 3 miles southwest of the town of Alice in an area heretofore looked upon as unfavorable, being in the intermediate area of the shallow Laredo-Pettus trend on the west and the Oligocene production along the coast line on the east. While there are several fields within this area, they are producing from comparatively shallow depth, and the ultimate recovery has been small.

The area first attracted attention as a result of a wildcat by H. H. Howell, independent operator of Corpus Christi, who got encouraging showings in two shallow wells drilled late last year and the first of this year. These wells, No. 1 Talbot and No. 1 Goldapp, offsetting each other, are about 2½ miles from production in the Lavaca grant. The showings logged in these wells in the upper section of the Frio formation at 3,600 feet were favorable enough to set casing, and they were originally completed as small wells, although later abandoned due to mechanical or salt water trouble.

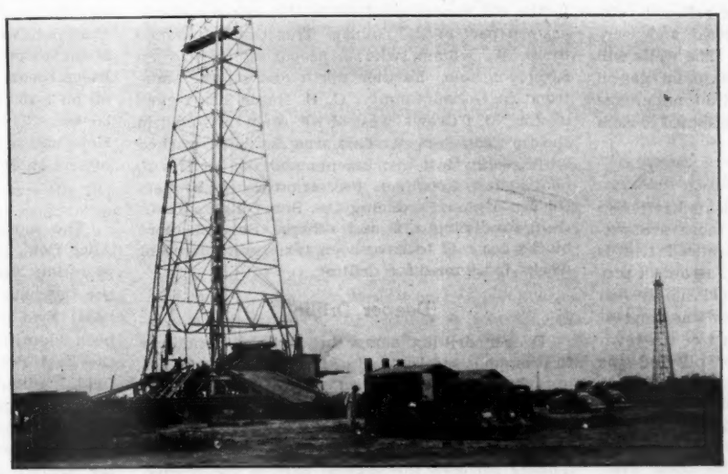
The meager showings in these wells failed to start any large-scale leasing campaign, and it was not until after completion of the same operator's No. 1 Lindsay and Reed that the area began to loom as a large potential oil reserve. The present well, which is producing from the basal Frio formation, was started in March and was completed April 18 for an initial production of 177 bbls. of 45-gravity oil through a one-eighth inch choke with tubing pressure 900 pounds and casing pressure 1,085 pounds. On a previous gauge through a three-sixteenths inch choke it flowed 441 bbls. Since completion the well has been flowing its initial gauge and there is no showing of salt water.

The hole was drilled to 5,425 feet. Top of the Frio section was picked up at 3,073 feet, and the Frio fossil (the top of the basal Frio section) was logged at 5,197 feet. Fifty feet of well-saturated sand was logged by a Schlumberger survey, and the completion was made in the top 10 feet at 5,375-85 feet.

Torsion balance work has indicated a large regional high running in a southwest-northeast trend. The presence of this high has set off an extensive trend play through northwestern San Patricio and adjoining counties as far north as Refugio, while to the south leasing has extended through southwestern Duval and all of Brooks County. Within recent weeks several geophysical crews have been moved to the area and the entire trend is being detailed by reflection and seismograph shooting.

Fuel for drilling is being supplied by Mosser & Presenal No. 1 Bankers Mortgage Co., approximately 3 miles northwest of the discovery. This well was completed through perforated casing in the top section of the Frio at 3,489-95½ feet for an initial production of 3,500,000 feet of gas and a small quantity of distillate. Supplying fuel for eight drilling rigs, however, soon taxed the capacity of the well, and the zone was recently reperforated and the volume of gas was increased to 12,000,000 feet daily.

There is little likelihood of this sand producing oil in commercial quantities, and future drilling will no doubt be confined to the deep sand. This theory is based on the core records of drilling wells and the recent completion of Tom Graham No. 1 Martens. The well is just northeast of No. 1 Talbot and Goldapp and 1½ miles west of No. 1 Lindsay and Reed and about 5 miles southwest of No. 1 Bankers Mortgage Co. Gas sand was logged in the Martens test at 3,522-33½ feet, and the well is being recompleted after it swabbed a small quantity of 25-gravity oil. While this sand has been cored at various intervals in all of the present drilling wells, it appears to be a sand lens and has shown gas or salt water. The section is badly broken and for this reason the top of the section cannot be accurately used for correlation purposes.



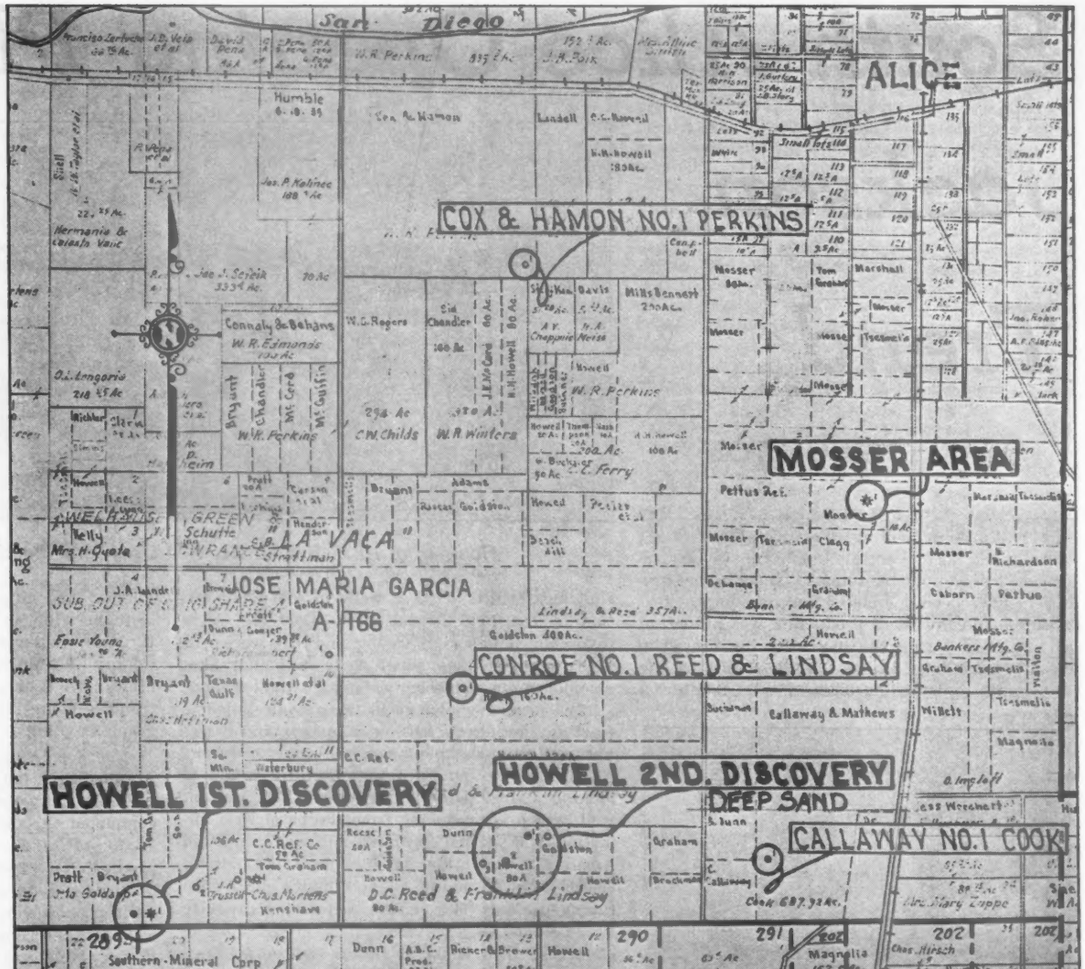
Drilling operations of H. H. Howell, Lindsay and Reed lease, east of the discovery well

It has been estimated that approximately $2,000,000 were spent for leases in this area within two weeks after completion of the discovery well. Prices paid for close-in acreage ranged from $500 to $1,000 per acre in cash and from $750 to $2,500 in oil payments. In most cases the trades carried drilling obligations or large overriding oil payments. Practically all buying has been by independent operators, who have estimated the producing area will extend over 5,000 to 6,000 acres and that the field will have an ultimate recov-

ery of 250,000,000 bbls. Major companies have hesitated to pay such high prices and for the time being are content to watch the outcome of the present drilling, although they have engaged actively in buying along the trend.

Although the field is in the early stages of development, drilling to date indicates future development will follow a northeast and southwest trend from the discovery well. This is based on the showing of Walter Goldston No. 1 Lindsay and Reed, an east offset recently completed for a distillate producer at 5,155-60 feet after showing salt water in the discovery horizon at 5,366-70 feet. Southwest of the discovery well, H. H. Howell No. 3 Lindsay and Reed logged the discovery sand at 5,287-5,330 feet and was completed through perforated casing at 5,288-5,310 feet, for an initial production of 157 bbls. per day through a one-eighth inch choke. Approximately 1,400 feet west of the discovery, W. G. Coates No. 1 Lindsay and Reed is reported to have logged the discovery horizon at 5,274-5,315 feet, and was completed through perforated casing at 5,248-58 feet.

The most interesting test drilling is Conroe Drilling Co. No. 1 Lindsay and Reed, 4,500 feet northwest of production which has indicated a major extension. Gas sand was logged at 5,241-53 feet, oil sand at 5,253-58 feet and shale from 5,258-65 feet. While this section was being drill-stem tested, the horizon is believed to be just above the regular pay, and the hole will be cored deeper before running casing. It is questionable to estimate as to how far the field will be extended in this direction, although a dry hole was recently drilled by Cox & Hamon on the W. R. Perkins lease, about 3½ miles northwest of the discovery well.



Porter Regenold Maps, Corpus Christi

South Alice field, Jim Wells County, Texas, showing location of discovery well and drilling now under way (Cox & Hamon No. 1 Perkins quit at total depth of 5,602 feet)

At a recent hearing before the railroad commission, operators in the field asked and were granted a 20-acre spacing program. The wells will be allowed to produce with a maximum gas-oil ratio, and the field will be prorated on an acreage and per well basis with 50 per cent assigned to each factor.

Wildcats Proposed

Since the discovery, several wildcats have been started and locations for several more are proposed along trend. The most advanced test is Humble Oil & Refining Co. No. 1 Tarrant, a projected deep test in Lot 4 of the Seefeld Subdivision Survey No. 205. It is about 5 miles southeast of the field and about 3 miles northeast of the town of Ben Bolt. Several showings of oil and gas have been logged in the top section of the Frio from 3,600 to 4,100 feet. The showings were logged at the approximate same depth as South Alice and the well is considered to have an excellent chance of producing from the basal Frio. Approximately 11 miles southwest of Ben Bolt, Magnolia Petroleum Co. is drilling below 3,700 feet on No. 1 Valdez Heirs, a proposed 7,000-foot test located in Share 5-B of the La Anima Sola Grant. Across the line in Duval County, Standard Oil Co. of Texas is starting a 7,000-foot test on the Dolores Garcia lease in Share 4, Concepcion Grant. A deep test is also slated to get under way in the old Sandia gas field in the extreme northeastern part of the county. This test is planned by O. W. Killam, who is preparing to drill an 8,000-foot hole. Farther north and on the same trend in Goliad County, C. B. Bunte has rigged up for No. 1 Crews, west of the town of Goliad in the De Leon Survey. This area has been worked with geophysical instruments and the well is to be drilled to 7,000 feet. Protection is held by Gem Oil Co., Union Producing Co., Sun Oil Co., Texas Gulf Producing Co. and others. Several more blocks are said to have been taken within recent weeks for immediate drilling.

Deeper Drilling

Deeper drilling along the Jackson trend was first emphasized in April of last year by the opening of the first important Cockfield production at the Benavides field. This opened the deepest production in the Laredo district and started a trend play east of the shallow Laredo-Pettus area, extending through the eastern part of the county. During the past six months, numerous deep tests have been drilled in search of this sand, and the past week, the second field was opened as H. J. Porter opened the "Fitzsimmons" pool with the completion of No. 1 D. Fitzsimmons which flowed 108 bbls. of 47-gravity oil per day through a 5/32-inch choke. Saturation in the Cockfield was logged at 4,296-4,303 feet, the total depth. The well is located about 9 miles northwest of San Diego. As this well was being completed, another wildcat about 15 miles due south and southwest of San Diego recovered several hundred feet of pipe line oil on a drill stem test in the Cockfield at 5,109-36 feet. The well is being drilled by Rowan & Hope and is located on the Cuellar Brothers' lease in section 96, B.B.B.&C. Survey.

Encouraging Feature

The most encouraging feature of the South Alice field, which is an incentive for further exploration along the Jackson trend regardless of the outcome of the present drilling, is that the basal Frio formation in the discovery well has been identified as the same section from which the East Premont field is producing. The latter field is about 20 miles to the southwest on the Seeligson ranch and was opened by Magnolia Petroleum Co. in December of last year. This field provided the first important Frio production for the district, and it has been estimated that the per acre recovery from the sand will range from 25,000 to 30,000 bbls.

Reduced State Allowables With Tighter Supervision of Runs

Crude oil production allowables in June having been established in Kansas, Oklahoma, Texas, California, Arkansas and Louisiana, the new month starts off with the production situation in better shape than it has been at any time this year.

The production allowable set for Texas by the railroad commission for the period of June 1 to June 15 is 1,578,726 bbls. per day on a five-day per week basis, or a total for the week of 7,893,630 bbls. This is an average of 1,127,661 bbls. per day on a seven-day basis. On June 16 a new schedule for the last half of the month will be issued which will provide for wells completed in the first half of the month.

As Texas oil producers enter the month of June under the new top field-allowable plan of production, interested observers speculate on the effect it will have on the drilling of new wells within proven fields. The plan is not designed to discourage the drilling of wildcat tests and from the present 412 drilling wells in Texas which are classified as "wildcats" there seems to be no letup in exploratory work.

Under the top allowable plan, maximum productions for the month were set for each of the proration districts in Texas. The district top allowables were then further broken down into top allowables for each field, with provisions that midmonth revisions will be made to care for new completions. In no case, however, will new completions be allowed to force gross production over the top field or district allowables, as has been done in the past.

How the completion of new wells worked to exceed the total state allowable grants for the last three first-half-month periods is shown as follows:

	New completions	Basic allowables first of month	Basic allowables last of period
March 1 to 20	409	1,493,173	1,515,389
April 1 to 19	397	1,510,337	1,546,183
May 1 to 17	422	1,553,683	1,595,493

Some of the increase in basic allowable was due to special exception orders issued during the period, but the greater part was due to addition of new producers under the previous orders which set allowables on a top-well instead of a top-field basis.

East Texas Gets Separate Rule

The East Texas field, where completions have been averaging 35 to 45 per week since the first of the year, was made the only exception to the new plan. There, as in the past, each new completion will be given its allowable on the basis of 2.32 per cent of its average hourly potential, or the marginal grant of 20 bbls. per day, whichever is highest.

This concession to East Texas operators has been successful in removing most of the demands that discrimination against the field because of its size be stopped. The groups which had heretofore announced intentions to resort to the courts for a test of the Saturday-Sunday shutdown orders as they affected the marginal well law, have now stated that their demands will be dropped.

Operators in the northern fields of the West Texas Permian Basin were generally well satisfied with the June order, as the proposed drastic cuts in per well allowables were not made. In the public hearing before the commission at Austin on May 10 consideration was given to reducing by half or more the present per well allowables in the Bennett and Wasson fields (which have been and continue to average about 100 bbls. per well per day). Other north basin fields were studied also. As seems to be the definite trend in all proration hearings, the matter of economic considerations constituted the principal reasons for justifying the high allowables. Drilling costs of these 4,800-5,200 foot fields as compared to shallower fields in the central and southern portions of the basin; restricted pipe line outlets and the necessity to truck much of the oil; wide spacing and restricted development programs, were all advanced as reasons why the high per-well allowables should not be reduced. No order was ever promulgated following this hearing, and the continuation of previous allowables through June is considered to indicate the commission's decision.

Perhaps nowhere in the industry's history has curtailed drilling been more noticeable than in the north Permian Basin territory. In such a field as the Wasson field of Gaines and Yoakum counties, now definitely proven over 30,000 acres, only 55 completions have been made in the past 12 months, and only 15 wells are drilling there at present and all on 40-acre patterns. In the Bennett field 5 miles to the east (which may eventually connect with Wasson) only 18 wells have been completed in two years.

The K.M.A. field in North Texas has a total of 430 producers in the deep Strawn horizon, of which over 400 have been completed during the past 12 months. This field continues to enjoy a favorable position in the proration picture, as it has a top allowable of 22,803 bbls. in June. This represents a per-well average of 53 bbls. for the present 430 producers. Pipe line proration, or the reluctance of the Texas Pipe Line Co. and Sinclair Prairie Pipe Line Co. to make connections to new completions, has discouraged starting of new wells there over the past month. At present there are 64 unconnected oil wells in the field.

Oklahoma Allowable Reduced

Oklahoma's chief conservation officer, W. J. Armstrong, recommended to the Oklahoma Corporation Commission that the state's crude oil production allowable in June be limited to 405,000 bbls. per day, a reduction of about 17,000 bbls. a day from the average allowable for May.

The Carter Oil Co. at last Thursday's meeting on proration informed the corporation commission that it would have to reduce its daily runs in June by 10,950 bbls. per day, and the Sinclair Prairie Oil Marketing Co. announced it would have to reduce its runs 2,500 bbls. daily. Representatives of the Sinclair Prairie recommended an allowable of 400,000 bbls. per day. Mr. Armstrong said that unless purchasers take up this distress crude another emergency order would have to be issued in June.

The Oklahoma City Wilcox zone, only area in class A rating, was reduced 3,334 bbls. to 76,100 bbls. daily; the 29 fields in class B were reduced 4,353 bbls. to 99,353 bbls. daily.

Nine fields in class C were cut back 1,877 bbls. to 42,842 bbls. Wells in class D rating are to be pegged at 62 bbls. per day, the group being cut 486 bbls. to 11,085 bbls. The unclassified group was cut 1,794 bbls. to 40,918 bbls.

Unprorated areas were reduced 5,898 bbls. to 134,702 bbls. This group includes the stripper areas and a few recently-opened fields as yet unclassified.

The most significant feature of the cut in average allowable is the fact that the pipe line companies of the state will be required to regulate their runs on the basis of the 405,000-bbl. allowable. It is the intention of the state proration authorities to see to it that no "underage" oil is run, as was done in the past two months.

California Situation Improves

On May 25, the Central Committee of California Oil Producers, official curtailment group, set the allowable crude oil production of California in June at 615,000 bbls. per day, with a tolerance of 5,000 bbls. to take care of new wells expected to be completed during the period. The committee again recommended that the total production for the month must not exceed 620,000 bbls. daily. During May the committee allotted 624,869 bbls. but actual production will probably be found to be around 695,000 bbls. per day when final tabulations are completed.

Union Oil Co. which has been buying current production from Santa Maria Valley field on a day to day basis announced that it would not purchase any additional crude oil from that field after May 31.

Additional Wilmington Curtailment

Operators in the Wilmington field adopted a new production program that contemplates a reduction in crude oil output of the field when it becomes fully effective. The new three point program provides that all Terminal zone wells shall be pinched back as soon as they clean up. A new maximum allowable of 600 bbls. per day for all Terminal zone wells has been set in place of the maximum allowable of 800 bbls. per day that has been in effect for several months. Until recently operators were allowed to produce approximately 60,000 bbls. per well following completion, but this has been voided, and it is the present intention to dispense with all flow tests for a period of 90 days. To take care of Ranger zone completions the new program provides that all wells finished in this zone north of Ship Channel 3 shall be cut back to 100 bbls. per day as soon as production has cleaned up and that wells finished in the Ranger zone south of Ship Channel 3 must be reduced to a maximum of 200 bbls. daily. Coincident with adoption of the new production program in the Wilmington field, operators in the Kettleman North Dome field approved a new program whereby production of that field would be reduced to 67,000 bbls. per day. Crude oil production in the Kettleman North Dome field averaged 82,264 bbls. daily during March and 80,957 bbls. per day during April but production

(Continued on Page 32)

Five Gasoline and Pressure Plants for K. M. A. Field

Operators in the K.M.A. field, North Texas, will be afforded the opportunity to maintain formation pressure in their wells if they care to avail themselves of the facilities of five plants, one now installed, and four to be installed in different parts of the 88-square-mile area. Deep Oil Development Co. already has a compressor plant installed and Sunray Oil Co. and Phillips Petroleum Co. are now installing a gasoline plant which will be able to deliver dry gas to the operators for repressuring.

The third project is being financed by Continental Oil Co. of Ponca City, Okla., and will consist of three gasoline plants with a total of five 400-hp. four-cylinder angle type compressors. These compressors are so designed that some of the cylinders will be operated to compress the gas for treatment to remove the gasoline, and the dry gas can be returned to the other cylinders in the same engines and be compressed to the required pressures necessary to maintain pressures in the formations.

There are three areas where these Continental Oil Co. plants will be built. One north of the Big Wichita River which flows through the field from east to west. This No. 1 plant will be a stabilization plant as well as a natural gasoline and repressuring plant. All raw gasoline from the No. 2 and No. 3 plants south of the river will go to No. 1 plant to be treated. This gasoline will be delivered through pipe lines between the plants.

The two plants south of the river will be designed to extract the natural gasoline and repressure the dry gas to either 1,200 pounds in the No. 2 area or 1,100 pounds in the No. 3 area and return it to the formations. The high-pressure pipe line distribution system has been planned and will be constructed as rapidly as the operators indicate they are ready to take the high-pressure gas and inject it into their wells.

To gather the gas from the various wells a 76-mile gas pipe line gathering system is being constructed. These lines will range in size from 2 to 16 inches in diameter with the larger pipe nearest the plants. Through this system it is planned to service the entire field. At present two 400-hp. compressors are being installed in the No. 1 plant north of the river and two more compressors of the same size in No. 2 plant in the 1,200-pound pressure area south of the river. As the Sunray-Phillips plant now being installed in the No. 3 or 1,100-pound area will afford service for some of the operators in that area only one 400-hp. compressor will be installed in the Continental Oil Co. plant at this time but provision is being made to install additional compressors in any of these plants when needed.

The analysis of the average gas from the K.M.A. field is as follows:

	Per cent
Methane	51.96
Ethane	13.17
Propane	17.68
Butane	10.64
Pentane	4.55
Hexane	1.15
Heptane+	.85
	100.00

The machinery will be installed in all-steel buildings, with concrete floors and foundations and fully enclosed. Surveyors are now at work on the right of way for the gathering lines and it is planned to start construction of the plants about June 5 and complete the work the middle of July.

Exports Holding Their Gain Over 1937 Shipments

Preliminary figures for April issued by the Bureau of Foreign and Domestic Commerce indicate petroleum exports are holding their margin of gain over 1937 established in earlier months of the year. The April preliminary report shows exportation of 7,553,000 bbls. of crude compared to 4,899,000 bbls. in April, 1937. Gasoline exports of 3,923,000 bbls. this April appear to have exceeded shipments of 2,732,000 bbls. in April, 1937, about 43 per cent. Kerosene shipments of 813,000 bbls. compare to 791,000 bbls. and even fuel oil shipments have shown an increase. Gas oil and distillate fuel oil exports in April, 1938, totaled 2,538,000 bbls., compared to 2,511,000 bbls. and residual fuel oil exports of 1,475,000 bbls. compare to 1,450,000 bbls. a year ago.

Seventh Ramsey Pool Well Estimated 11,316 Barrels

The seventh large well in the Ramsey pool in Payne County, Oklahoma, was washed in Monday, flowing 942 bbls. of oil in two hours for an estimated potential of 11,316 bbls. daily. It is Mid-Continent Petroleum Corp. and others No. 3 Ramsey, SE SW NW section 18-18-2e, east offset to the discovery well, completed in January. It had Wilcox sand at 4,755-93 feet, total depth. Two other wells in the pool were due for completion this week.

Petroleum Lectures at the University of Strasburg

During the week of June 13-19 the recent progress made in petroleum technology will be presented in a series of lectures at the University of Strasburg, France, as follows:

J. Von Braun, Heidelberg, "Progress in the Chemistry of Hydrocarbons." Waterman, Delft, "Polymerization of the Unsaturated Hydrocarbons." V. Henri, Liege, "Catalysis and Cracking of Mineral Oils." Prettre, Lyon, "Knock Inhibitors." Dunstan, Anglo-Iranian, London, "Petroleum Gases and Their Uses." Schmitz, Petrofina, Bruxelles, "Naphthenic Acids." Mathieu, Sorbonne, Paris, "Structure of Paraffin." Valli-Douau, Pechelbronn, "Crystallization of Paraffin." Weiss, Ecole du Petrole, Strasburg, "Structure of Lubricating Oils." Hugel, Ecole du Petrole, Strasburg, "Synthesis of Lubricants." Vellinger, Strasburg, "Asphaltic Emulsions." Navarre, Standard Fr. des Petroles, "Solvent Refining."

Mercer County Division of West Virginia in Protest

The Mercer County division of the West Virginia Petroleum Association, met at Bluefield, elected officers and ratified the seven-point program of objectives recently adopted by the state association.

Resolutions urging the elimination of the temporary 1 cent per gallon state gasoline tax, and urging repeal of the duplicating federal 1 cent per gallon tax, were unanimously adopted.

H. C. Lewis, of Bluefield, was reelected chairman of the Mercer County division. Other officers elected were: J. S. Pate, of Princeton, vice chairman; J. D. Watts, of Bluefield, secretary; G. K. White, of Princeton, chairman of the legislative committee; J. L. Bailey, of Matoaka, chairman of the local affairs committee, and C. C. Mulhern, of Bluefield, chairman of the public relations committee.

Alberta Conservation Board Has Conference With Producers

The new Alberta Oil and Gas Conservation Board, Chairman W. F. Knode, C. W. Dingman and F. G. Cottle, which took charge June 1, held a conference in which N. E. Tanner, minister of lands and mines, and John Harvey, deputy minister, took part with representatives of the Alberta Petroleum Producers Association.

The primary purpose of the board is to reduce the wastage of Turner Valley gas, now estimated at 200,000,000 feet a day, in order to maintain reserves for gas consumers and pressure for crude oil wells. In addition, the board will take charge of methods and rates of proration of crude production. It is anticipated new potentials of crude producers will be taken, utilizing a different method; as it is felt that possibly the existing method of operating on quota for 10 days before taking the full open flow results in an overestimate of actual capacity. The board will also handle the problem of securing markets for Turner Valley crude, and its policies will aim at the maximum ultimate oil recovery from the field.

N.L.R.B. Texas Co. Hearing Moves to Port Neches

HOUSTON, Tex.—Testimony in the Galena Park refinery case ended, the N.L.R.B. hearing moved from Houston to Port Neches to continue investigation of C.I.O. charges that Texas Co. violated provisions of the Wagner labor relations act.

The Galena Park hearing turned on stipulations concerning the number of Galena plant employes belonging to the C.I.O. and the Houston Works Federation, accused by the C.I.O. as a "company union." The federation claimed 102 of the plant's workers as members; the C.I.O., 93 members. Twenty-one employes belonged to both unions. The C.I.O. contested 27 names on the federation list, charging the workers were employed in offices or were otherwise ineligible for Oil Workers Union membership. Attorneys viewed a possible election at the plant as a solution. The C.I.O. has asked that the federation be disestablished, a request that must be ruled on by the board before an election could take place.

N.L.R.B. Orders Election Held By Shell Oil Co. Employes

WASHINGTON, D. C.—The National Labor Relations Board has directed holding of elections to determine collective bargaining representatives for employes of Shell Oil Co. of San Francisco. Employes will be divided into five groups, each afforded opportunity to vote for Oil Workers International Union, C.I.O., for a labor organization affiliated with the American Federation of Labor, or for neither.

Groups which accord a majority to C.I.O. will be combined in a single bargaining unit with C.I.O. as their representative. Where the ballot results in a majority for an A. F. of L. union, employes within that group will constitute a separate bargaining unit.

On May 24, 1937, the board found that all employes who will participate in the elections constituted a single bargaining unit and certified the oil workers', machinists', electrical workers', blacksmiths', and boilermakers' unions as their joint representatives. Collective bargaining negotiations came to a standstill, however, when the C.I.O. union and the four A. F. of L. unions could not come to an agreement over the latter's proposal that grievances be handled through the particular union having jurisdiction over the work performed by the aggrieved employe, regardless of the employe's union affiliation. No negotiations with the company have been conducted since.

Muskogee Refinery Labor Difficulties to N.L.R.B.

Two rival labor unions, claiming a majority of the 400 men employed at the Pure Oil Co.'s 9,000-bbl. refinery at Muskogee, Okla., decided to submit their grievances to Dr. E. A. Elliott, regional director of the National Labor Relations Board. The plant has been operating since May 2 under a curtailed schedule of crude runs and for a period of four months prior to that date had been shut down.

In the past week pickets of one of the unions have practically stopped workmen from entering or leaving the plant. However, continuous operation of the plant has prompted the threat on the part of the picketing union to add to its pickets. This in turn has caused civic bodies to seek a settlement and await the decision of Doctor Elliott. In the meantime the company continues to operate the plant at a reduced rate.

The OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

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Wrong Trend

Current statistical reports, while encouraging in that national crude oil production has been greatly reduced, reveal conditions still not entirely satisfactory.

The drastic cuts, amounting to 265,000 barrels daily over the past three weeks, are not bringing the quick improvement in refinery markets hoped for because they have not been reflected in the industry's manufacturing operations.

With total demand for petroleum in this country approximately the same as it was last year, current production is 400,000 barrels daily, or 11 per cent, less than it was twelve months ago.

Such a supply and demand situation, if extended through to the refineries, obviously would quickly absorb excess inventories and assure a needed market recovery.

The trouble lies in the fact that refinery operations are being maintained at approximately last year's level, the large reduction in crude production being reflected, to a great extent, only in the reduction in the stocks of crude, already lower by some 2,000,000 barrels than they were a year ago.

The latest A.P.I. reports show that for the three weeks ending May 21 crude stocks were reduced 4,550,000 barrels, practically all of which were east of California.

This average reduction of 217,000 barrels daily means, in effect, that most of the reductions in crude production made in the past three weeks by state allowable regulation supported by producers have been offset by withdrawals of crude oil already in storage.

It is apparent that it would have been far better for the industry if these withdrawals had been made from refineries rather than from crude tanks in the fields.

Gasoline inventories for the three weeks under consideration were reduced 3,347,000 barrels, over 50 per cent of which was accounted for by the large reduction in the week ending May 7.

At the same time 3,843,000 barrels of fuel oil and gas oil were added to storage, so that total inventories at plants throughout the country are now approximately the same as they were at the start of the month.

The stocks of fuel oil and gas oil are now 37,000,000 barrels or nearly 40 per cent greater than they were a year ago. Gasoline stocks in contrast are 8,000,000 barrels greater, a gain of 10 per cent.

While a large part of this increase in heavy oils has been on the west coast, most of the eastern areas ended the main consuming period with larger inventories that they had last fall. Excessive runs to stills with a falling off in demand account for this development.

While some withdrawals from crude oil storage may be desirable at this time, with aboveground stocks 125,000,000 barrels less than a few years ago, there is no emergency situation existing in regard to excessive inventories of raw materials.

The immediate need is to have the large reductions made in crude production reflected in lower refinery operating levels to the end that gasoline stocks will be reduced at the rate of a million barrels or more weekly until such time as the excess stocks now overhanging the market are eliminated.

The same lower level of refinery operations will stop the rapid increase in stocks of heavier oils which, if not checked, will bring about unneeded accumulations by next fall.

There can be no sustained improvement in the refined market, or an increase in refinery revenue in line with the present posted prices for crude oil, until this situation is recognized and the needed adjustment in refinery operations made effective.

Triple Damage Suits Out by Nolo Contendere

WASHINGTON, D. C., May 30.—The announcement made by the department of justice that all but eight of the oil companies named in the second Madison indictment will enter pleas of *nolo contendere* and pay fines came with surprising suddenness. The *nolo contendere* pleas will be entered before Judge Stone at Madison on June 2, and it is now anticipated that as soon as they are entered the judge will make his rulings on the first case.

The plea of *nolo contendere* is tantamount to a plea of guilty for purposes of the particular case only, and subjects the defendants to all penalties which might follow a conviction. In this case maximum fines only will be recommended by the department of justice, and no jail sentences will be imposed on individuals if the judge accepts the recommendations. However, the 14 oil companies entering pleas of *nolo contendere* will not be liable for triple damage suits which the antitrust laws permit injured parties to bring against concerns found guilty of antitrust violations. It is noteworthy that in agreeing to accept pleas of *nolo contendere* the department of justice insisted that one responsible official of each major company or group of companies be included in the pleas in order to carry out the department's policy of making corporation officials personally liable for the acts of their companies.

Department Announcement

The department's announcement and Assistant Attorney General Thurman Arnold's statement follow:

The defendant companies and their executives who have offered to enter pleas of *nolo contendere* and pay maximum fines follow: Socony-Vacuum Oil Co., Inc., Charles E. Arnott, vice president (formerly president); Wadhams Oil Co., A. G. Maguire, chairman of board, Milwaukee; Standard Oil Co. (Indiana), Amos Ball, general sales manager, Chicago; Cities Service Co., Cities Service Oil Co., Empire Oil & Refining Co., Harry D. Frueauff, vice president, Tulsa; Continental Oil Co., Edward Karstedt, formerly vice president, Denver; Pure Oil Co., G. C. Morris, sales manager, Chicago; Shell Petroleum Corp., Alexander Fraser, president, St. Louis; Sinclair Refining Co., J. W. Carnes, vice president, New York; Mid-Continent Petroleum Corp., Robert W. McDowell, vice president in charge of sales, Tulsa; Phillips Petroleum Co., Frank Phillips, president, Bartlesville, Okla.; Ohio Oil Co.; Skelly Oil Co., W. G. Skelly, president, Tulsa.

The indicted companies and their executives whom the government proposes to bring to trial on September 26, follow: Gulf Refining Co., William V. Hartman, vice president, Pittsburgh, Pa.; Texas Co., W. S. S. Rodgers, president, New York; H. W. Dodge, vice president in charge of sales, New York; S. B. Wright, territorial manager, Chicago; Tide Water Associated Oil Co., Edward L. Shea, executive vice president, New York; J. W. Warner, assistant vice president in charge of sales, Tulsa; Barnsdall Refining Corp., Edwin B Reeser, president, Tulsa; Globe Oil & Refining Co. (Oklahoma); Globe Oil & Refining Co. (Illinois); Globe Oil & Refining Co. (Kansas), I. A. O'Shaughnessy, president, Minneapolis; National Refining Co.

The case, United States v. Socony-Vacuum Oil Co., Inc., and others, is one of two prosecutions pending in connection with the oil industry in the midwestern states. The other prosecution (United States v. Standard Oil Co. (Indiana) and others) has already been tried and resulted in the conviction of 46 defendants, on whom sentences have not yet been imposed. The court has under consideration motions for new trials. This statement in no way affects the latter case, although it is part of the same general picture.

In the case under consideration (United States v. Socony-Vacuum Oil Co., Inc., and others) 14 of the defendant companies and 11 of the defendant executives have offered to enter pleas of *nolo contendere* and to pay maximum fines and costs totaling approximately $400,000 on all three counts of the indictment. In view of the nature of these pleas, amounting virtually to pleas of guilty, this proposal has been accepted by the department and has been recommended to the court. A responsible executive of each of these companies has evidenced his responsibility for the activities of his company by pleading *nolo contendere*. We feel that these pleas result in the conviction of those who have been primarily responsible for the activities which gave rise to violation of the antitrust laws by these companies. Therefore the government, with the approval of the court, will dismiss this indictment as to the other indicted officials connected with these companies.

Eight of the companies indicted, including their officials, have not joined in this proposal or offered to plead *nolo contendere*. As against them, the indictment will be vigorously prosecuted.

Grounds for Action by Department

1. *Conditions in the industry which tend to create monopoly control.* This present case is the second of the criminal cases brought at Madison, Wis., dealing with practices of the dominant group of major oil companies in the midwestern area. The first case has been tried and has resulted in convictions of 46 defendants who have not as yet been sentenced. The indictment in that case was brought to present to an impartial judicial tribunal evidence collected by this department tending to show the fixing and maintaining of prices, both wholesale and retail, of gasoline throughout the midwestern area. The case now under discussion presents another aspect of a single picture. It was brought to present the evidence which the department had of a series of unlawful agreements entered into by the major oil companies beginning in the spring of 1931 and continuing at least until December 22, 1936, the date of the indictment, whereby the maximum margins of gross profits for gasoline jobbers, the jobber contract, and other practices relating to jobbers were fixed and made uniform. Thus, by the practices attacked in the first case, the major oil companies by concerted action were engaged in raising the prices at which they marketed their gasoline. By the activities attacked in the second indictment these companies and others were, at the same time, by concerted action preventing the large class of jobbers from enjoying the benefits of free competition. Both activities clearly violated the Sherman Antitrust Act as it has been construed by the courts.

2. *Procedural action taken in this case and the grounds therefor.* A criminal prosecution was originally brought. It is the policy of this department, unless there are compelling reasons to the contrary, to bring criminal actions rather than suits for injunction where defendants have committed acts which constitute violations of the criminal provisions of the antitrust laws. The department should not take the responsibility of declining to present evidence in a criminal prosecution where it has that evidence in its possession. In general, there can be few reasons for failing to present to the court such evidence of criminal action. The existence of acquiescence on the part of the government over long periods in the past which may make the institution of a criminal prosecution inequitable or its success impossible might be one of these reasons. In these cases, however, there was no acquiescence by governmental authority in the activities complained of.

Much confusion, however, has been created by statements that the oil companies were following policies which had received the sanction of government departments under the N.R.A. This is not the fact. The practices for which the defendants in the first oil case were convicted never received government authority under the N.R.A., or otherwise, and the court and jury so found. The same is true of the practices with respect to jobbers for which the defendants were indicted in the present case. Furthermore, these jobber practices began as early as 1931, long prior to the N.R.A., and continued long after the N.R.A. was declared unconstitutional.

The Department of Justice is responsible for the enforcement of the antitrust laws. It would be neglecting its duty if it did not enforce the law as written and interpreted by the courts. As above stated, the N.R.A. even when regarded as valid, gave no sanction to the activities attacked in either of these cases. These activities did not fall under the exemptions from the antitrust laws which the N.R.A. purported to grant. It may be further noted that, despite the efforts of the government in its defense, the N.R.A. was declared unconstitutional. To base a prosecution policy on claims of exemption from the antitrust laws granted by the N.R.A. after it had been declared unconstitutional would amount to continuing to give effect to that unconstitutional statute rather than to the valid antitrust laws, and in that way run counter to the declared will of congress.

3. *The economic results which are to be expected from the action taken by the government in this case.* The offer now made by certain of the defendants to enter pleas of *nolo contendere* and pay fines and costs may be regarded as a complete capitulation on their part. The conviction of the 46 defendants in the first case, taken together with the fact that a responsible executive of each of the companies joining in the proposal in the present case assumes, by pleading *nolo contendere*, responsibility for the illegal activities of his company, should achieve, as against them, substantially the purpose for which the prosecutions were instituted.

The case is important because it tends to preserve competition where it still exists. Too often during the past 40 years antitrust proceedings have been brought 10 years too late, when competition has already been destroyed, and it has become impossible to re-create it by a criminal conviction or a court decree. It will, therefore, be the policy of this department to watch carefully evidences of combinations in industries which are still competitive, in order to avoid the difficulties of breaking up monopolies or combinations in situations where no competing organizations exist to fill the gaps. It is important to announce this policy to clear up the misunderstanding which may arise from the fact that the department is acting in areas which are admittedly competitive to some extent at the time the proceeding is brought.

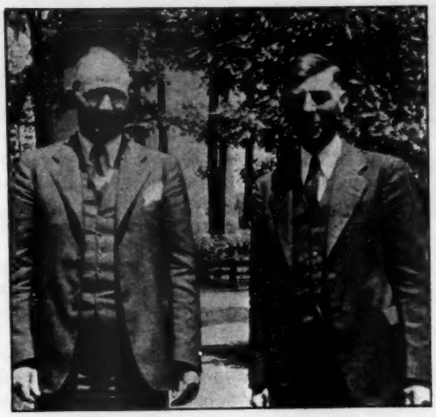
Pennsylvania Associations in Oil and Gas Conference

By J. P. O'DONNELL

STATE COLLEGE, Pa., May 28.—The annual Pennsylvania petroleum and natural gas conference, which ended a two-day session today, was featured by one of the most interesting programs provided in the eight-year history of these meetings. The excellence of the program reflected credit on the sponsoring organizations, the Pennsylvania Natural Gas Men's Association, the Pennsylvania Grade Crude Oil Association, the Bradford District Pennsylvania Oil Producers Association, and the Pennsylvania State College School of Mineral Industries and, in particular, the program chairman, Dr. Sylvain J. Pirson of the college faculty.

Discussion of the economics of the Pennsylvania situation by John D. Gill of Atlantic Refining Co., Philadelphia, highlighted the oil session Friday afternoon. After stating that those who wished to make a living out of the production and products of Pennsylvania crude must regard the situation with a long-range view, he said a certain degree of stabilization is essential. Subsequently Mr. Gill introduced graphical representations of the relationship of actual inventories to economic inventories of various Pennsylvania Grade crude products; inventories to prices; value of the crude to its products, and in many instances compared these values to values representative of the national industry. Besides showing how prices reacted as inventories followed an unbalanced trend, these graphs also revealed a definite narrowing of margins. In the seven years preceding January 1, 1930, Bradford crude averaged $1.70 above Oklahoma whereas in the ensuring eight years this margin dropped to $1.25. Mr. Gill also cited declining refined prices, contrasting 1923 with 1937 to show a drop from 13.73 to 5.54 for straightrun gasoline; 7.66 to 5.21 for kerosene; 5.70 to 4.46 for fuel oils and from 1929 to 1938, 24.28 to 18 for lube oils.

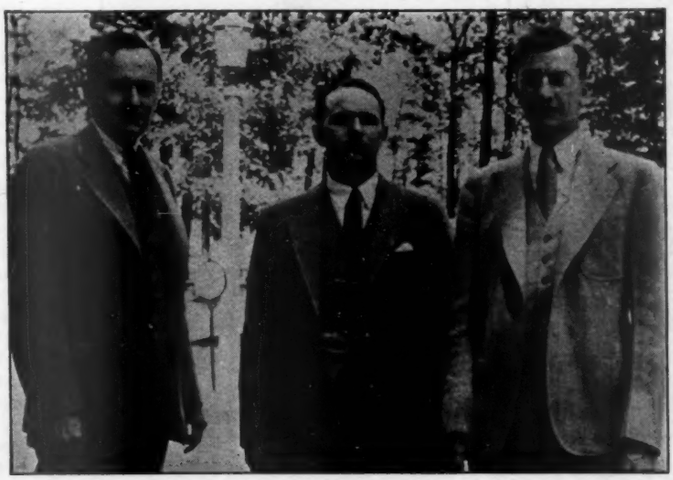
Mr. Gill also pointed out how Pennsylvania gasoline margins over Mid-Continent gasoline declined from 3.36 in 1923 to 2.61 in 1929 and to .61 in 1937. A similar condition applied to kerosene, he said, and these two products in 1926 accounted for 55 per cent of income but dropped to 46.5 per cent in 1937. Lube oils on the other hand, he said, have advanced from 32.3 per cent in 1923 to 38.6 per cent in 1929 and 40 per cent in 1937. He questioned if there is not too much of a burden being placed on lube oils in view of the trend in demand for these oils. From 1925 to 1937, demand for lube oils has increased 14 per cent in this country, a 6 per cent decline in industrial demand being offset by a 37 per cent gain in automotive consumption. In the same period the Appalachian area increased runs to stills 60 per cent and production of Pennsylvania Grade crude oil 67 per cent. He contrasted this heavy increase with the much smaller increase in automotive demand. A further point he stressed was that in 1926 only half the crude processed in the region was



C. C. Hogg, general superintendent, and Bert Sowles, lease superintendent, National Petroleum Co., Titusville, Pa.

Pennsylvania while this proportion increased to 61.5 per cent in 1937.

Mr. Gill cited some of the repercussions of violent fluctuations, in particular the now historic 55-cent bright stock price which, he said, represented an invitation to participate which was accepted. Acceptance of this invitation by additional interests has had a bearing on the situation, he stated. The speculative effect of fluctuations has been bad for the industry, Mr. Gill continued, and stated it is one of the industry's jobs to reduce fluctuations to a minimum. Their elimination can be effected, he concluded, by cooperation and without collusion. This cooperation is one in which each unit of the industry operates so it itself will have no uneconomic inventories.



W. H. Young, Bradley Producing Corp.; M. E. Mitcham, producer; G. W. Holbrook, Bradley Producing Co., all of Wellsville, N. Y.

The oil session, at which J. C. Martin, executive secretary of the Bradford District Pennsylvania Oil Producers Association, presided, was opened with a paper on "Salvaging Oil Field Equipment," by Winston L. Davis, Moore Producing Co., Bolivar, N. Y. After reviewing the obvious economic advantages of proper salvage work, Mr. Davis described both equipment and methods employed by his company. Among the latter was the use of hydraulic power to recover casing. This is effected by screwing a cap, with two connections, to the top of the casing. Water is turned in through one connection and air released through the other. When the casing is filled with water, the second connection is closed and pressure, building up in the well, raises the casing. After moving the casing a few feet by this method, it can be pulled out by a tractor usually without difficulty. This paper was discussed by E. J. W. Egger, Linde Air Products Co., Pittsburgh.

An exhaustive paper on the "Application of Packers to Oil and Gas Well Drilling and Production" was presented by John Pearson, Oil Well Supply Co., Oil City, Pa.

The oil industry was complimented on its safety record by E. C. Spring of the Pennsylvania Manufacturers Association Casualty Insurance Co., Philadelphia, in his paper on "Streamlining Industrial Safety." This paper was discussed by C. S. Sheasley of the same association and by H. D. Brown, Jr., Brundred Oil Corp., Oil City, Pa. Mr. Brown showed the value of a safety program. His company suffered no lost time accidents in the first quarter of 1938, the first such record in the several years accident statistics have been kept.

Frank M. Brewster, president, Pennsylvania Natural Gas Men's Association, presided at the gas session Saturday which opened with a talk on "Tubing of Gas and Flowing Oil Wells Under High Pressure," by J. A. Thompson, Otis Eastern Service, Inc., Bradford. Mr. Thompson described the adjustable bottom-hole choke, not yet used in the East though successful in the West. In this choke, control of port size is effected by rotating the tubing. His talk was supplemented by motion pictures of the 1,000-bbl. wells recently drilled near Bradford and of the method used in snubbing tubing into wells under high pressure.

"Rotary Drilling in the Appalachian Region," was discussed by Maurice E. Nicklin, Oil Well Supply Co., Oil City. Mr. Nicklin said one of the principal factors in the introduc-

tion of this type of rig in the East was the control it offered when large gas pockets at high pressure are encountered, for which a satisfactory solution had never been worked out when drilling with cable tools. Three rotaries are now operating in Pennsylvania, one in the northern and two in the southwestern sections.

An interesting paper on "Progress in Industrial Utilization of Natural Gas," by D. A. Campbell, Eclipse Fuel Engineering Co., Rockford, Ill., ended the gas session. Mr. Campbell cited its lower cost and flexibility for radiant tubes, automatic and economic immersion heating, its use for submerged firing, novel in this country, and its flexibility and accuracy of control in convection heating.

W. F. Clinger, president, Pennsylvania Grade Crude Oil Association, was toastmaster at the dinner Friday evening. Speakers included Dean Edward Steidle, School of Mineral Industries; Frank M. Brewster, president, Pennsylvania Natural Gas Men's Association; Fayette B. Dow, vice president, and J. E. Moorhead, executive secretary, Pennsylvania Grade Crude Oil Association, and J. G. Montgomery, United Natural Gas Co., Oil City, who showed a motion picture, "The Life Story of an Oriskany Sand Gas Well in Northern Pennsylvania."

O. O. Cole and H. J. Little, South Penn Oil Co., Pittsburgh; Dean Edward Steidle, School of Mineral Industries, Pennsylvania State College; J. G. Montgomery, Jr., United Natural Gas Co., Oil City, Pa.

Oil and Gas Conference

(Continued from Page 27)

was cut to approximately 70,000 bbls. per day early in May.

Kansas Remains at 160,000 Bbls.

Kansas oil fields will be allowed to produce 160,000 bbls. daily in June, the same as in May, Kansas Corporation Commission announced on Sunday.

The allowable is well under the market demand estimate for Kansas crude fixed by the federal Bureau of Mines at 172,300 bbls. a day for June.

In an accompanying statement, E. R. Sloan, commission chairman, said the allowable order is "subject to revision at any time during the month if conditions warrant.

"If any purchaser is unable to secure his full market requirements under this allowable the commission will endeavor to see that his needs are fully met.

"It is the commission's purpose that every barrel of oil which can be produced and sold without creating waste or inequities between the various producers and land owners, be produced and sold, and that in the production and sale of the full market requirements that the lease owners, royalty owners and land owners be dealt with fairly so as not to cause discrimination and drainage."

Failure of three major crude oil purchasers to take their full oil allowables is causing shortages estimated at 7,000 bbls. daily, according to E. G. Dahlgren, director of the oil and gas conservation division of the Kansas Corporation Commission.

In an unprecedented action the commission issued citations directing the purchasers to appear at Topeka June 2 to show cause for failure to take May allowables fixed for wells connected to their gathering lines.

Stanolind Crude Oil Purchasing Co., Phillips Petroleum Co. and Sinclair Prairie marketing companies were cited.

The three companies have been directed "to show cause why they fail and refuse to take the allowable crude oil production for the month of May to the leases to which they are connected, thereby causing inequitable, unfair and discriminatory taking within a common source of supply."

Arkansas June Allowables

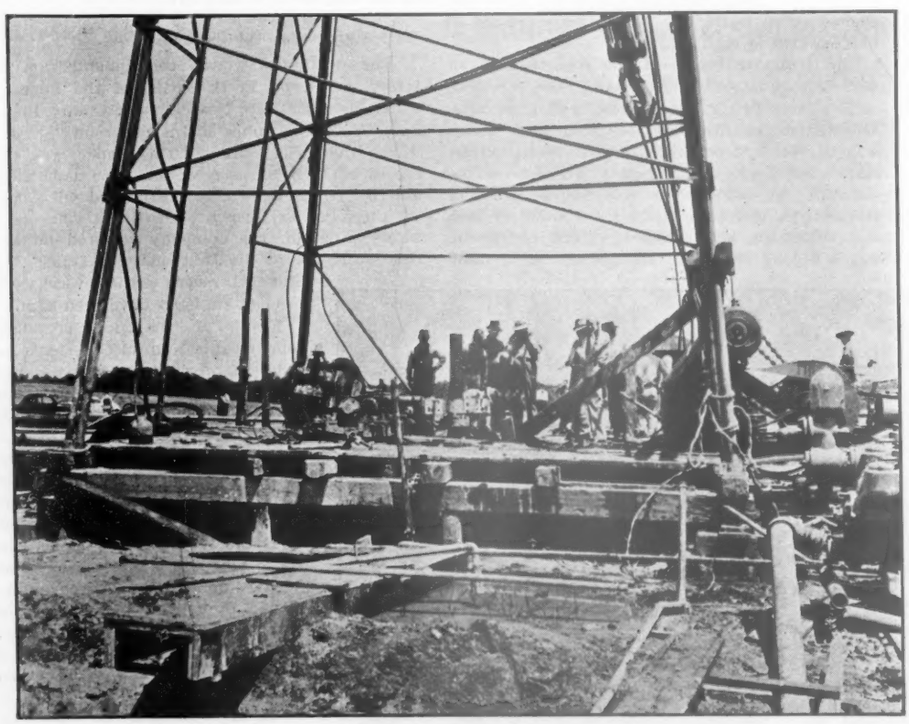
The Arkansas Board of Conservation on May 28 set the June allowable for the Jones horizon in the Schuler field at 9,603 bbls. per day, or an average of 200 bbls. per well. Phillips Petroleum Co. and Lion Oil Refining Co. had asked for a greater per well allowable and the Saturday meeting was a special one to hear discussion on this pool alone. Previously the Village-Magnolia area of Columbia County was given an allowable based 50 per cent on acreage and 50 per cent on bottom-hole pressure and gas-oil ratio at 2,000 feet to the barrel of oil. The June allowable for the south Miller County field, a part of the three-state Rodessa district, will be 200 bbls. to the 10 acres, and a revision may be ordered when bottom-hole pressures are rechecked beginning June 1. The June allowable for the Buckner area, also in Columbia County, will be 800 bbls. daily for the entire field. Both the Village-Magnolia and Buckner areas have the 40-acre spacing rule.

Louisiana's Small Cut

Louisiana's state allowable was set at 250,475 bbls., only 975 bbls. per day less than the allowable for May.

Evidence on the ratios of gas and oil withdrawals in the Texas part of the Rodessa oil field compared with Louisiana will be taken at a hearing called by the Texas Railroad Commission for June 14 at Austin.

MURRAY COUNTY JOINS GAS PRODUCING AREAS



Murray County found itself among Oklahoma's gas-producing counties this week when Gilbreath & Dutton No. 1 Wolfe, in SE SE SW of section 8-1n-2e, just north of Davis, came in from a shallow formation for approximately 35,000,000 feet of dry gas daily. The well is the first commercial one ever drilled in the county. Photograph shows crews taking pressure tests as curious Davisites look on.

Oil Bills Hang On the Adjournment of Congress

WASHINGTON, D. C., May 31.—With the adjournment of congress probable within the next couple of weeks, there is considerable doubt as to the passage of the various pieces of legislation affecting the oil industry. The Gillette bill to divorce marketing from other branches of the petroleum industry is still buried in the senate judiciary committee with little prospect it will even reach the senate calendar at this session.

The Lea bill for regulation of interstate natural gas pipe lines is scheduled to be called up in the senate after disposal of the relief appropriation bill. Although this bill passed the house in the last session with no opposition and was favorably reported by the senate committee, it has received no action in the upper chamber. No serious opposition is expected when it is taken up, but Senator Pat Harrison of Mississippi has proposed to offer an amendment to prevent the Federal Power Commission from making rate orders which would prevent natural gas from competing with artificial gas.

The stream pollution bill, which has lain inactive in conference since last August, is showing signs of life, as the conferees have held a number of meetings during the past week. The house passed the Vinson bill, generally approved by the oil and other industries, calling for studies for gradual elimination of pollution, while the senate passed the drastic Lonergan bill imposing penalties for depositing industrial wastes in navigable streams or tributaries. Conferees on the measure were deadlocked for months, but there are now indications that Senator Lonergan and the other senate conferees may be willing to recede from their position and accept a compromise closely following the provisions of the house measure.

Submerged Oil Lands

Vigorous protests on the part of California state officials and oil interests apparently have been successful in blocking any action at this session of congress on the proposal that the federal government attempt to take title to oil deposits underlying coastal waters. Although the house committee on the judiciary has favorably reported the Nye resolution which passed the senate last year, but amended to apply only to oil deposits off the coast of California, members of congress from that state are satisfied that they can block house action during the remainder of the session.

Meanwhile, the judiciary committee has designated a subcommittee to hold hearings on the bill of Representative John F. Dockweiler of Los Angeles which would remove any doubts as to the validity of California's claim to these submerged oil lands. Since the objective of the Dockweiler bill is exactly the opposite of the Nye resolution, this action is tantamount to reconsideration of the question by the judiciary committee and makes it very difficult for leaders of the committee to press for house action on the Nye resolution. It is doubtful the subcommittee will actually hold hearings on the Dockweiler measure at this session, since the Californians feel they are already in a strong position and that any hearings on this bill would suggest there is some doubt as to the state's title to submerged oil lands, whereas they contend no doubt whatever exists.

Tax Bill

In permitting the tax bill to become a law without his signature, President Roosevelt served notice he will continue his fight for the undistributed corporation profits tax and more drastic capital gains taxes and will demand another showdown in congress next spring. The issue probably will feature the elections this fall and may be a part of the New Deal campaign to defeat members of the house and senate who have not been 100 per cent proadministration in their records, even though the senate approved a tax bill less to the president's liking than the compromise which finally became law without even a record vote and with scarcely any protest from New Deal senators.

Since the passage of the tax bill removing all but a fragment of the undistributed profits tax was generally considered to have removed one of the major obstacles to business recovery, Washington observers interpreted the president's criticism of the bill as indicating he has refused to accept the theory that New Deal policies have been retarding business and that he will continue to fight against what he considers aggregations of great wealth and business policies which permit certain individuals to accumulate wealth and economic power. This apparently means the President is in no mood to make gestures of reconcilliation to business but will continue to direct the New Deal along a course of further social and economic reform.

Mexico

An official proposal from the Mexican government for compensating American oil companies for property expropriated by that government has been laid before the state department by the Mexican ambassador, Dr. Francisco Castillo Najera. The proposal was in the form of a lengthy written statement which required translation and extensive analysis by experts in the department before it could be considered by the secretary of state and his immediate advisors, and in the meantime no details were made public. It was understood, however, that the plan provides for compensating the American companies with oil taken from their properties, presumably transferred to them by the Mexican government at a price considerably below the market so that over a period of years their profits from the resale of this oil might total a sum to be agreed upon as compensation.

The Mexican government requested the secretary of state to transmit the proposal to the American oil companies concerned, since it is the companies and not the department which will have to make final acceptance or rejection. However, should the department submit the proposal to the oil companies it would be with the implied recommendation that it is sufficiently meritorious to warrant serious if not favorable consideration, and for this reason the department is expected to give the proposal very close study. On several occasions Secretary Hull has declared that confiscation of property of Americans by foreign governments must be followed by "effective compensation," although he has not expressed himself publicly as to the valuation to be placed on seized properties or methods of making compensation.

Twelfth Annual Field Conference of Kansas Geological Society

The Kansas Geological Society announces its twelfth annual field conference to be held along the Front Range of the Rocky Mountains in Colorado, September 1 to 3, inclusive. This conference is held with the cooperation of the Rocky Mountain Association of Petroleum Geologists. The purpose will be primarily to study the Pennsylvanian and pre-Pennsylvanian rocks exposed and to attempt to correlate them with rocks of similar age in western Kansas and other areas. Outcrops ranging from pre-Cambrian to Cretaceous in age will be visited and studied. The pronounced unconformity at the base of the Pennsylvanian and some old structures exposed along the mountains with no apparent reflection in the younger rocks are some of the features to be observed.

Harry W. Osborne, consulting geologist of Colorado Springs, Colo., will act as director of the conference. He will be assisted by C. E. Dobbin, U. S. Geological Survey, Denver; A. E. Brainerd, Continental Oil Co., Denver; and Ross L. Heaton, Bureau of Reclamation, Denver.

The conference will convene at La Junta, Colo., and travel southwest across the Apishapa Uplift to Walsenburg. Thence in a northwesterly direction it will proceed through Rye and Beulah to Canon City. The northwest extension of the Apishapa Uplift and the overlap of the Dakota sandstone on the pre-Cambrian near Rye and excellent pre-Pennsylvanian sections at Beulah and Canon City will be observed.

On the second day the route will go northward from Canon City to Colorado Springs. The type locality of the Fountain sandstone and Glen Eyrie shales (Cherokee) will be visited at Colorado Springs, where an interesting pre-Pennsylvanian section will also be studied. A section from the pre-Cambrian to the Pierre shale will be inspected in a distance of about 1½ miles. From Colorado Springs the conference continues northward through Perry Park to Boulder. En route the most northerly extension of pre-Pennsylvanian rocks known to occur in Colorado and an oil seep in fractured pre-Cambrian rocks north of Golden will be examined.

The third day the conference will continue northward from Boulder to the Wyoming line, visiting the type locality of the Lyons sandstone and the fossiliferous Ingleside formation of Upper Pennsylvanian age. An exposure of Pennsylvanian basal conglomerate composed of Mississippian boulders will also be seen. From Beulah northward to this area the unconformity at the base of the Pennsylvanian should be of particular interest to geologists familiar with the Pennsylvanian basal conglomerates of the Central Kansas Uplift. The geology of the Big Thompson Canyon—Grand Lake area will be discussed by Ross L. Heaton, and Dr. Margaret Fuller Boos of Denver University.

Barco Concession Oil Through Pipe Line Next Summer

In response to a question from a stockholder, at the annual meeting of Socony-Vacuum Oil Co., President John A. Brown said the company's relations with the Colombian government were "reasonable, fair and satisfactory and we have no reason for thinking that we will have any difficulties."

He said the company's investment in the Barco concession in Colombia, in which Texas Corp. had a joint interest, would amount to about $15,000,000 when the pipe line and terminal facilities were completed. The pipe line is being laid and Mr. Brown was of the opinion that by the middle of next year oil would be moving through it.

Officers Elected at Gasoline Supply Men's Meeting

A meeting of the board of directors of the Natural Gasoline Supply Men's Association was held immediately after the annual membership meeting at its recent convention. The following members of the 1937-38 board of directors were present: D. W. McKay, L. S. Allen, V. C. Canter, D. E. Fields, G. B. Lane, W. D. Moorer and Roy R. Bush (representing A. J. Kerr). Members of the newly elected directorate for 1938-39 present were: E. H. Triphaus and M. F. Waters (representing Ches. Herndon). With President McKay presiding, the following were elected as officers for the 1938-39 fiscal year: President, D. E. Fields, Tulsa Boiler & Machinery Co.; first vice president, A. J. Kerr, Pittsburgh Equitable Meter Co.; second vice president. W. W. Woobank, Woobank Pump & Machinery Co.; treasurer, E. H. Triphaus, Taylor Instrument Co.

Naphthenic Hydrocarbons From Petroleum Made Available

Recent studies on the composition of petroleum have shown that a large variety of naphthenic hydrocarbons are present in many crude oils. The results recently reported by C. O. Tonberg, M. R. Fenske and W. J. Sweeney on work done by them at Pennsylvania State College and in the laboratories of the Standard Oil Development Co. show that methyl cyclohexane is the most abundant. Because of this fact and because other hydrocarbons of the same general class possess properties which are useful commercially, considerable general interest is being manifested in them. Rohm & Hass Co. of Philadelphia made available to the above researchers quantities of methyl cyclohexane and cyclo hexane of unusually high purity.

Germany Gets Small Oil Field In Taking Over Austria

The Zistersdorf oil field in what was formerly Austria, now a part of the German Reich, is currently producing about 1,500 bbls. of crude oil per day. During the first four months of 1938 the Austrian field produced 16,700 tons, or about 122,745 bbls. of crude, a total which is slightly more than half of the production in the whole of 1937.

Ten Per Cent Gain in Gasoline Tax on California Sales

LOS ANGELES, Calif.—A substantial increase in gasoline sales during April was reported by the State Board of Equalization. The gasoline tax revenue for April amounted to $4,632,373.50, an increase of $464,-024.94, or 10.02 per cent over April, 1937. The tax was accessed against the distribution of 154,412,450 gallons of gasoline. The April sales were the highest reported by the board since August, 1937.

Three Prospecting Licenses Issued in Great Britain

The British secretary for mines announces that three additional prospecting licenses, covering a total area of approximately 395 square miles in Yorkshire, Cheshire, Staffordshire, Fifeshire, Clackmannanshire, Kinross-shire and Perthshire, have been issued by the Board of Trade under the Petroleum (Production) Act, 1934, and the Petroleum (Production) Regulations, 1935, to the D'Arcy Exploration Co., Ltd.

Revise Road Knock Tests

Within a short period copies of a revised method for making antiknock road tests will be made available as a result of agreements arrived at in meetings held at Wichita, Kans., during the A.P.I. convention. These meetings included representatives of the C.F.R. committee, S.A.E., the A.P.I. and Motor Fuel Steering committees.

Alberta Oil Development Discussed

"Sands, Clays and Minerals," published in Chatteris, Cambridgeshire, England, contains an interesting article on "Oil in Alberta," by J. L. Irwin. This magazine is published in the interests of those engaged in the production and use of rare and economic minerals and the issue contains 18 original articles on subjects of this nature which are well illustrated and authoritative.

THE MARKETS*

CRUDE OIL: *Reduction of 10 cents per barrel in posted price for Centralia, Ill., crude reflects a situation which is largely local. Continued declines in national crude production now totaling more than 300,000 bbls. daily since late April have strengthened crude markets in other areas. Continuance of low production assured for June.*

REFINERY: *Better demand for gasoline reported in Mid-Continent, Gulf Coast and several other areas although no general advances in quotations have materialized so far. Reductions in diesel fuel made effective at several points along Atlantic seaboard. Natural gasolines continue weak in Mid-Continent. Other products unchanged.*

TANK-WAGON AND POSTED DEALER: *Regular and premium-grade gasoline prices steady with wide range in prices for third grades.*

FINANCIAL: *Several stocks decline to lowest levels since 1934. Average of 30 representative stocks for week ending May 28: High, 25.71; low, 24.14; close, 24.55. May 21: High, 26.55; low, 25.25; close, 25.32.*

*Detailed information in market section.

Cuban Petroleum Bill Approved By Island Legislature

A bill regulating the exploration and exploitation of petroleum in Cuba recently passed by the house has now been approved by the senate. It provides that the exploration and exploitation of petroleum and its manufacture, refining, and transportation is in the public interest, and that concessions will be controlled by the government for a period of 30 years.

Unofficial versions are that concessionaires must pay a royalty of 15 centavos per year per hectare for claims which are worked and a further royalty of 10 per cent in cash must be paid on all petroleum extracted.

World Oil Map

A comprehensive map showing the oil and gas fields of the world with their official names, has been completed by E. C. Jacobson, map maker, Tulsa. The map is 50 inches deep by 80 inches wide, and is drawn on Mercator's Projection.

In addition to the general map, large scale insets are included showing the Mid-Continent and California fields, Mexico, Venezuela and Trinidad, and U.S.S.R., giving the production in each country in 1936 and 1937.

The Tulsa cartographer is the official map maker for the Nomenclature Committee of the Mid-Continent Oil and Gas Association. He spent several months in research before beginning work on the world map. Other maps which he has made, and in general use by major companies are those of the United States, the Mid-Continent fields, and the official nomenclature maps of Arkansas, Colorado, Illinois, Kansas, Louisiana, New Mexico, Oklahoma, Texas and Wyoming.

Obituaries

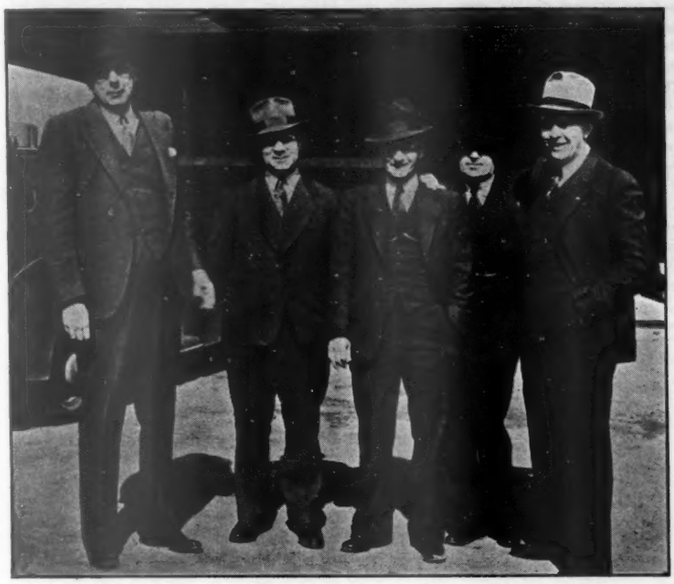
ALBERT G. LOTT, 51, Tulsa, superintendent of Hinderliter Tool Co., died May 27.

WILLIAM L. HANNIS, 70, died in Tulsa, May 24. He began work in the oil fields at 18.

C. B. McGEE, 70, retired oil well driller, Wichita, Kans., at one time active in Butler County, Kansas, died suddenly May 23.

C. FREDERICK WALL, president of Wall Rope Works, died in New York May 27. He was a grandson of William Wall, founder of the company, and is survived by a brother, Harold M. Wall, vice president of the company.

Refinery Topics Before N.P.A. Manufacture Department



Richard Hulme, Kendall Refining Co.; J. H. Knowlden, Socony-Vacuum Oil Co.; E. J. Senne, Socony-Vacuum Oil Co.; G. O. Ebrey, Pennzoil Co.; H. G. Eaton, Superior Oil Works and National Petroleum Association secretary

By J. P. O'DONNELL

BRADFORD, Pa., May 26.—Nearly 100 representatives of member refineries attended the annual meeting of the Department of Manufacture of the National Petroleum Association held here yesterday and today. The group inspected the refineries of Kendall Refining Co. in Bradford; Quaker State Oil Refining Corp. at Farmer's Valley and Socony-Vacuum Oil Co. at Olean, N. Y., and made a special inspection of the waste disposal plant of Kendall Refining Co. At the Emery Hotel they heard papers by E. E. Ebner, Quaker State Oil Refining Corp., on "A Flexible Water Supply System"; by E. E. Bown, Kendall Refining Co., on "Employer-Employe Relations"; and by George F. Fitzgerald, Socony-Vacuum Oil Co., on "Chemical Engineering as Applied to Present Day Refining."

Essentials of a flexible refinery water supply system were listed by Mr. Ebner, who described the system used at his company's Farmer's Valley plant, as: Reliability of supply; suitable composition of the water; freedom from failure due to power interruptions and constant service line pressure. Mr. Ebner discussed how each of these requisites is met by this plant.

Four deep well centrifugal pumps, ranging in capacity from 350 to 850 g.p.m., supply the refinery with 48° F. water from a 150-160-foot deep gravel bed while the balance is obtained from a creek passing through the refinery. The latter water, varying from 36° F. in winter to 90° F. in summer, is screened before entering a clear water sump from which it is pumped to the system by a vertical four-stage deep well pump with a capacity of 750 g.p.m. Gravel wells were cited as the best and most reliable water source, experience showing that if a well is properly developed the capacity holds up indefinitely.

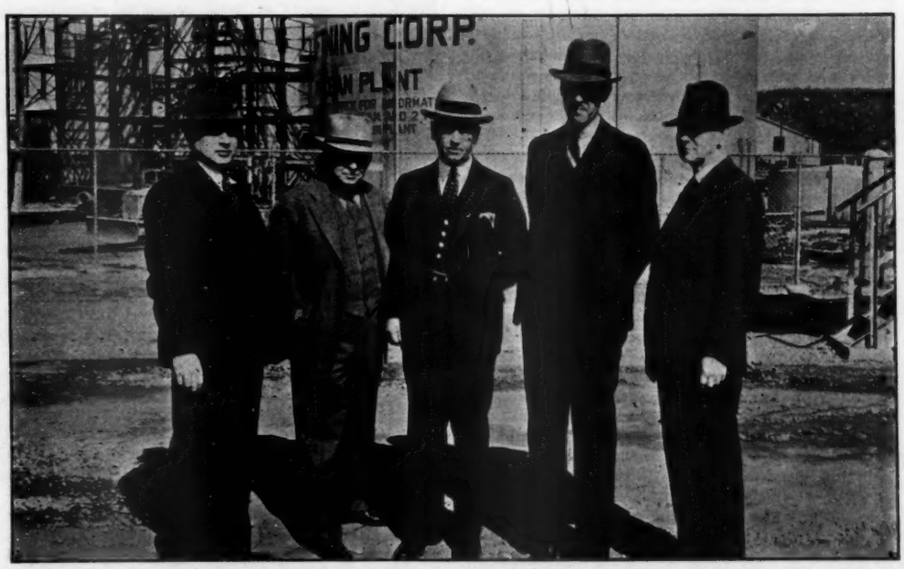
Despite a pH of 6.5, which ordinarily would tend to corrode, the low dissolved oxygen content and freedom from iron of the well water makes it less corrosive than it would appear. Clear, tasteless and relatively soft, it contains about 15 p.p.m. of carbon dioxides, 14 p.p.m. of chlorides and 5.9 p.p.m. of sulfates. The soap hardness in p.p.m. of calcium carbonate is 55, the turbidity, 1 p.p.m., and the hardness in grains per gallon is 3.2. This water has been found ideal for all cooling purposes, provided the final temperature of discarded water does not exceed 135° F. at which temperature dezincification of condenser and cooler tubes takes place and steel is corroded. Absence of suspended matter and dissolved compounds permits its use in tubular equipment with only annual inspections. The creek water has a pH of 7.2, is high in chlorides, sulfates, iron and dissolved solids, is turbid and contains mud and silt. Its use is limited to open type cooler and condenser boxes.

After stating that an uninterrupted water supply is essential if tubular equipment is to give the same safety measures as box-type condensers and coolers. Mr. Ebner said the plant is prepared to meet a power failure emergency with a 210,000-gallon storage tank capable of supplying cooling water requirements for an hour and standby steam creek water pumps. He described the plant system as follows: The refinery has two cooling water distribution systems and a separate fire system. The well water system is supplied with 48° F. water from three wells at 40 pounds per square inch while the fourth well supplies 350 g.p.m. to the tank which floats on this system. Height of the tank provides 52 pounds per square inch pressure which is cut, through reducing valves, to the 40 pounds of the well system. An electric level control starts and stops the fourth pump so as to maintain the tank's water level.

Water from the well water system is elevated to 65° F. for use on the refrigeration equipment. Centrifugal pumps recirculate it for condensing and cooling in the balance of the plant at a pressure of 45 pounds. Creek water also supplies this second system but it is used for only box type condensers and coolers. If the pressure on the second system falls below 40 pounds, check valves cut in the well water system and tank to maintain it at that level. The fire main system is fed direct from the tank at 52 pounds and, if necessary, fire pumps can raise the pressure to 110 pounds.

The necessity of constant service line pressure was stressed by Mr. Ebner who pointed out it is

(Continued on Page 46)



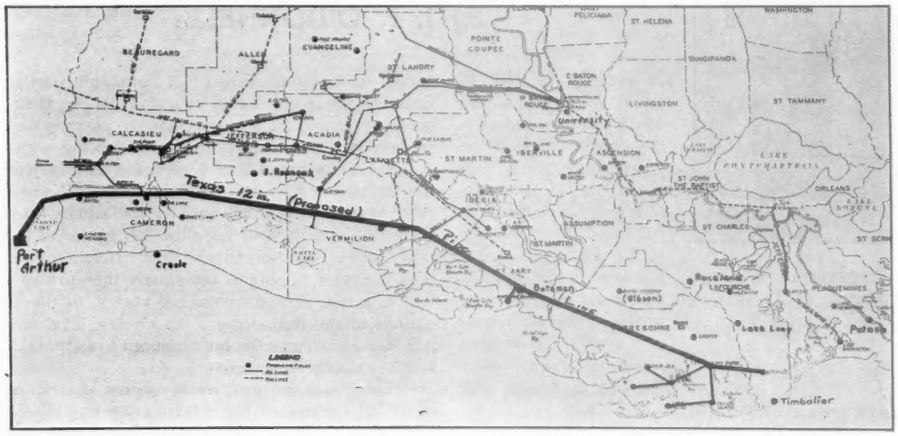
MacLean Houston, George Wolleston, L. Abbott, D. Hansen and Herbert Wagner, all of United Refining Co., Warren

Pipe Line Activity

Texas Co. Survey for 250-Mile Pipe Line

HOUSTON, Tex.—Right of way surveys and plans for a proposed 12-inch pipe line from the Texas Co. Terrebonne Bay group of fields in southeastern Louisiana to the company's refinery at Port Arthur, Tex., are being made by Texas Pipe Line Co. Although it is problematical at this time that the line will be laid, all details are being worked out and full preparations made so the project can be carried out without delay should it be considered feasible and desirable at any time.

As proposed, the line will be approximately 250 miles long, and the right of way, although not selected yet, will follow the most direct routing possible between the fields and Port Arthur without consideration to favorable terrain conditions.



That portion of Coastal Louisiana which the proposed line will traverse consists of vast expanses of low-lying, isolated, tidal marshes and swamps, broken by numerous bays, lakes, canals and other waterways which will have to be crossed. A number of the fields to be served are in remote marsh or open water bodies many miles from dry land and accessible only by boat.

Under such conditions for so much of the total distance, laying the line will be a major engineering feat. However, this company has had previous experience in laying shorter lines under similar conditions in Coastal Louisiana, and does not anticipate any impossible obstacles. More favorable terrain could be had for some stretches by laying the line along the highway or railroad rights of way but this would involve a much more circuitous routing further to the north and would not eliminate all marsh and water work.

The line is being planned to provide a more convenient, dependable and speedier oil outlet for the production of the numerous fields which Texas Co. has developed and is proving along the Louisiana Coast, particularly those in the marsh and water areas of the extreme southeastern part. Present movement of this oil is entirely by water. Practically all the fields to be served are adjacent or accessible to navigable waterways, through which the oil is barged either direct to Port Arthur, or to central loading points in the Gulf of Mexico for transfer to tankers.

If laid, the line will replace, and not augment the present water transportation system which has served these fields so far, company officials state. It is not the desire of the company to increase its runs out of these coastal fields, other than those necessitated by natural development of these fields. At the same time, laying of the line will be contingent upon several factors, one of which will be the cost. At best the project will involve a large expenditure, and unless this expenditure provides a more economical transportation in the long run over the present water transportation, other advantages being considered, laying of the line may be held up.

Principal fields developed by Texas Co. in the Terrebonne Bay district, located in the bay or in the adjacent marsh area, south of Houma, Terrebonne Parish, are Lake Barre, Caillou Island, Lake Pelto, Dog Lake and Four Isle. The company also controls the major portion of the adjacent Leeville field, Lafourche Parish, and owns a number of proved salt domes and prospects in the area. All are within a radius of about 50 miles and are completely isolated from dry land, with several being in open water entirely out of sight of land. Pipe lines, according to contemplated plans, will be laid from all of them to the main line. At present oil is barged to Port Texaco, a tanker loading point in deep water of the Gulf of Mexico out from these fields.

Other fields owned by the Texas Co., or in which this company has substantial production to be served by the line include Horseshoe Bayou and Bateman Lake, St. Mary Parish; New Iberia and Fausse Point, in Iberia Parish, and East Hackberry, Cameron Parish. The proposed right of way will follow northwestward from the Terrebonne Bay district fields, passing near the Bateman Lake and Horseshoe Bayou fields, to a point near Abbeyville, Vermilion Parish; thence it will turn west on an almost direct line through the East Hackberry field to a point on the Sabine River (Texas state line) at the north end of Sabine Lake, and from there around the lake to Port Arthur.

In addition to Texas Co. fields along the proposed line are a number of fields owned by other companies, few of which so far have any pipe line outlet. Most of these fields, like those of the Texas Co., have depended on barge movement of oil through the numerous canals.

So extensive are the marsh areas and water bodies that few dry land locations will be found for pump stations, and it is likely most of these will have to be built on piling foundations. Generally no ditching will be required, or be possible, for laying the line, as the pipe will sink of its own weight. Much of the work will be done off barges and boats, and the numerous navigable water canals will facilitate movement of pipe along the right of way.

Plans Under Consideration for Lance Creek-Denver Line

Plans for construction of a 6-inch welded pipe line from Lance Creek to Denver (approximately 230 miles) were disclosed when the Cilebur Corp., incorporated in Delaware, made application for a certificate of convenience and necessity to the Colorado Public Utility Commission. Norman E. Bradley was named as president and his office given as 1001 Midland Savings Building, Denver. At that office, occupied by Barney E. Whatley and Walter E. Schwed, attorneys, it was said no statement was to be made. The application states the cost will be $3,000,000; that the proposed tariff for moving oil will be 60 cents per barrel; that construction will start 30 days after permit is granted; that revenue is estimated at $400,000 per year; and expenses at $75,000.

Continental Oil Co., which has a refinery at Denver and production in Lance Creek, has no connection with the project, according to Vice President W. H. Ferguson. Bay Petroleum Co., which has a refinery at Denver and is buying Lance Creek crude, may be interested, though this could not be ascertained. There is considerable independent production on the west and north sides of the field, part of which is being purchased by Minnelusa Oil Co., presumably for Bay Petroleum Co. There are two Sundance wells outside the unitized area making 700 bbls. each per day. Same interests are buying 400 bbls. of Sundance and 200 bbls. of Minnelusa sand production daily from Argo Oil Co. There are also two or three Minnelusa sand producers on the west side outside of the unit. At 60 cents per barrel for traffic cost and an estimated income of $400,000, the pipe line would have to run around 1,800 bbls. per day. There is more than that quantity of independent production in the field at present, according to estimates.

Standard of Ohio Plans Line Across Maumee River

Standard Oil Co. of Ohio has asked the War Department for permission to construct a gasoline pipe line from its refinery at Toledo across the Maumee River to the Shell Petroleum Corp. bulk plant on the north bank of the river. Shell recently constructed a gasoline line extending from St. Louis to Indianapolis and an extension is being laid to Lima, Ohio. Standard of Ohio is contemplating laying a line from this point to Fostoria to connect with its line to Toledo. As a result of these lines and, providing physical connections between the two pipe line systems are supplied, it will be possible for Shell to pipe gasoline from St. Louis to its Toledo bulk plant on the Great Lakes.

Federal Court Grants Injunction Against Gas Proration Order

SAN ANTONIO, Tex., May 28.—A three-judge federal court here granted a temporary injunction asked by F. C. and E. P. Henderson, operators of a natural gasoline plant at Sanford, in the Panhandle sour gas field, restraining enforcement of a railroad commission gas proration order issued May 4. Hearing of the case on its merits was set by Appellate Judge Joseph Hutcheson of Houston and District Judges R. J. McMillan and Duval West of San Antonio for June 23 at Austin.

Applicants attacked the validity of both the proration order and the law under which it was issued. Their effect was to take property without due process and therefore unconstitutional, it was argued. The proration formula was assailed as arbitrary. The 640-acre drainage area was declared too great; too much weight was accorded acreage and pressure and not enough to potential, applicants charged.

Counsel for the Hendersons insisted the law itself was not actually a conservation statute, but rather a measure to adjust correlative rights of owners of gas in a common pool. Its effect, they said, was to prorate market, not prevent drainage.

L. M. Fischer of Amarillo, one of Hendersons' counsel, said the order cut the Hendersons to 2½ per cent of their gas wells' potential, or 7,000,000 feet daily, which is 21,000,000 feet below their needs to fulfill contracts with the combined carbon company.

Phillips Petroleum Co., supporting the railroad commission order, was refused right to intervene in the case. Assistant Attorneys General W. M. Hill and W. C. Davis appeared on behalf of the commission. Sanford is in Hutchinson County.

Petroleum Employment Statistics

Figures compiled by the bureau of statistics of the department of labor on petroleum refining employment in February show employment as 117.8 compared to 119.6 in February, 1937, and payrolls as 136.6 compared with 122.7. Figures on employment in petroleum producing show 74.6 in February, 1938, against 73.5 in 1937 and payrolls 69.4 per cent in February, 1938, against 63.8 in February, 1937.

Refinery Expansion

Mohawk Petroleum Signs License Agreement With Universal Oil

CHICAGO.—Mohawk Petroleum Corp. of San Francisco, Calif., signed a license agreement with Universal Oil Products Co. on June 1 to cover existing cracking operations in its refinery near Bakersfield, Calif. The agreement was accomplished after several months of study and investigation of the cracking patent situation by E. V. McKenzie, chief counsel for Mohawk. Alfred Marsten is president and Frank Long vice president of the Mohawk Petroleum Corp., which recently purchased the Mohawk Petroleum Co. The company is the second independent California refiner to sign a Universal license agreement for use of the Dubbs cracking patents, the first being the Wilshire Co., Inc., of Los Angeles.

Cities Service Okmulgee Plant To Be Shut Down During June

Cities Service Oil Co. has shut down its Okmulgee, Okla., refinery and the plant is expected to be closed throughout June. Cause of the temporary shutdown is an abnormal inventory of refined products, according to Don V. Eells, superintendent of the refinery. The company expects to reduce the excess stocks during the shutdown so that full operations may be resumed at the end of the 30-day period.

Sinclair Awards Contracts For Work at East Chicago

FORT WAYNE, Ind.—Koppers Co.'s western gas division here has just been awarded two construction contracts by the Sinclair Refining Co. for its East Chicago, Ind., refinery. The contracts are for a riveted and weld-caulked, water sealed gas holder with a capacity of 750,000 cubic feet, a sweating tank, 25 feet in diameter and 18 feet high, three open-top rundown tanks, 26 by 10 by 8 feet, and two hot water tanks 12 feet high and 8 feet 6 inches square. The tanks are to be of all welded steel. The gas holder will be completed in October and the tanks in August.

Rodessa Oil Installing a New Cracking Unit at Shreveport

SHREVEPORT, La.—Rodessa Oil & Refining Co. will begin initial operation of a new cracking unit at its Shreveport refinery late in June. The plant is designed under patents of the Forward Process, and incorporates features which facilitate the manufacture of unusually high-octane gasoline.

British American Negotiating For Calgary Refinery Site

CALGARY, Alberta.—British American Oil Co. is negotiating with the city of Calgary for a 90-acre site south of the Bow River in East Calgary, for a refinery of 5,000 bbls. daily crude capacity, to be erected at a cost of $1,000,000. Construction will be started this summer, and it is expected the plant will be in operation by January, 1939. This plant will supplement the British American refinery now in operation at Moose Jaw, Saskatchewan, in catering to the requirements of the prairie provinces. The project involves the construction of a new crude oil line from the Turner Valley field; and will, it is expected, lead to further extension of the company's marketing facilities in Alberta.

Natural Gasoline

Construction Well Under Way On Portex Gasoline Plant

SHREVEPORT, La.—Construction is well under way on the new 15,000-gallon compression plant of the Portex Oil Corp. of Portland, Ore. The plant, located in the Logansport gas field of Shelby County, East Texas, will be on stream by the middle of June, it is expected. The plant will operate on the production of three gas wells, extracting the natural, and returning residue gas to the formation. Construction was delayed during the deepening of one of the wells, to provide for input of the lean gas.

Contract Let for Gulf Coast Gasoline Plant

HOUSTON, Tex.—Hamman Exploration Co., Houston, has let contract to Western Supply Co., Tulsa, for the installation of a natural gasoline absorption plant in the South Bay City field, near Bay City, Matagorda County, Texas. The plant will have a capacity of between 40,000,000 and 50,000,000 feet of gas daily. Hamman Exploration Co., which opened the field in 1936, now has five producing wells. In addition there are three other wells in the field.

New Arkansas Gasoline Plant to Be Enlarged

SHREVEPORT, La.—The recently constructed natural gasoline plant of the East Texas Refining Co. (F. W. Burford interests) in the Miller County, Arkansas, extension of the Rodessa field, will shortly be enlarged. Additions to the new 50,000-gallon absorption plant will include eight new compressors, absorbers and a cooling tower. Estimated cost of the new equipment is placed at $150,000.

Natural Gas

Natural Gas Sales in March Under March Last Year

Total revenue of the manufactured and natural gas industry in March was $74,608,700, a decrease of 2.1 per cent from $76,232,300 in the like 1937 month, the American Gas Association reports. Revenue in the first three months aggregated $233,128,500, a decline of 0.8 per cent from $235,074,500 in the first quarter of last year.

March manufactured gas sales amounted to 32,368,400,000 feet, an increase of 1.9 per cent over the similar month of last year, while March manufactured gas revenue was $31,919,700, or 3 per cent more than a year earlier. Manufactured gas sales in the first quarter of 98,913,100,000 feet were 5.1 per cent larger than in the corresponding months of last year, while revenue of these companies totaled $96,602,300, or 3.9 per cent more than a year earlier.

Natural gas sales in March of 115,333,900,000 feet were 8.9 per cent below those in the like 1937 period, while natural gas revenue for the month amounted to $42,689,000, or 5.6 per cent less than in the similar period of 1937. In the January-March period of this year natural gas sales dropped 7 per cent to 361,577,700,000 feet, from last year, whereas revenue of $136,526,200 was 3.9 per cent under the level for the first quarter of last year.

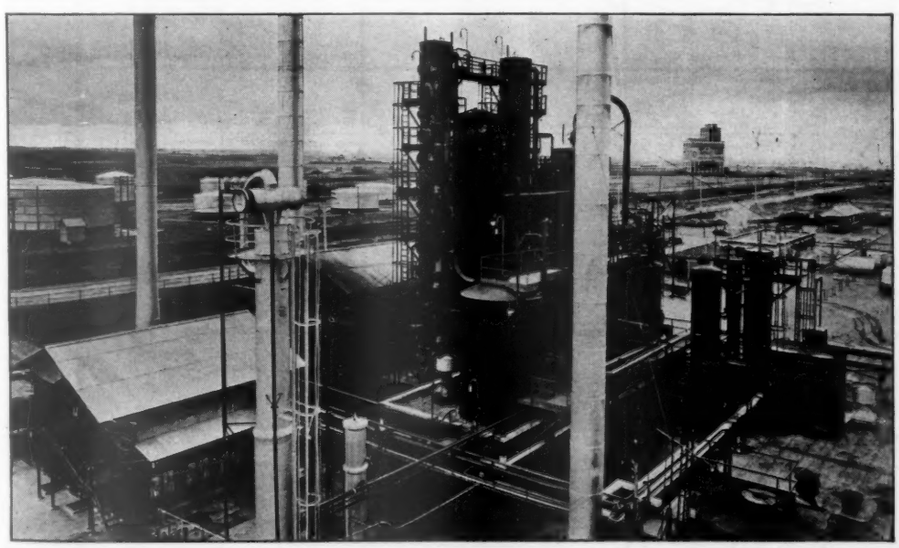
June Demand in Burrton And Otis Fields, Kansas

June demand for natural gas of 570,000,000 feet for the Burrton field of Reno and Harvey counties and 505,000,000 feet for the Otis field of Rush and Barton counties was reported to the Kansas Corporation Commission by purchasing companies.

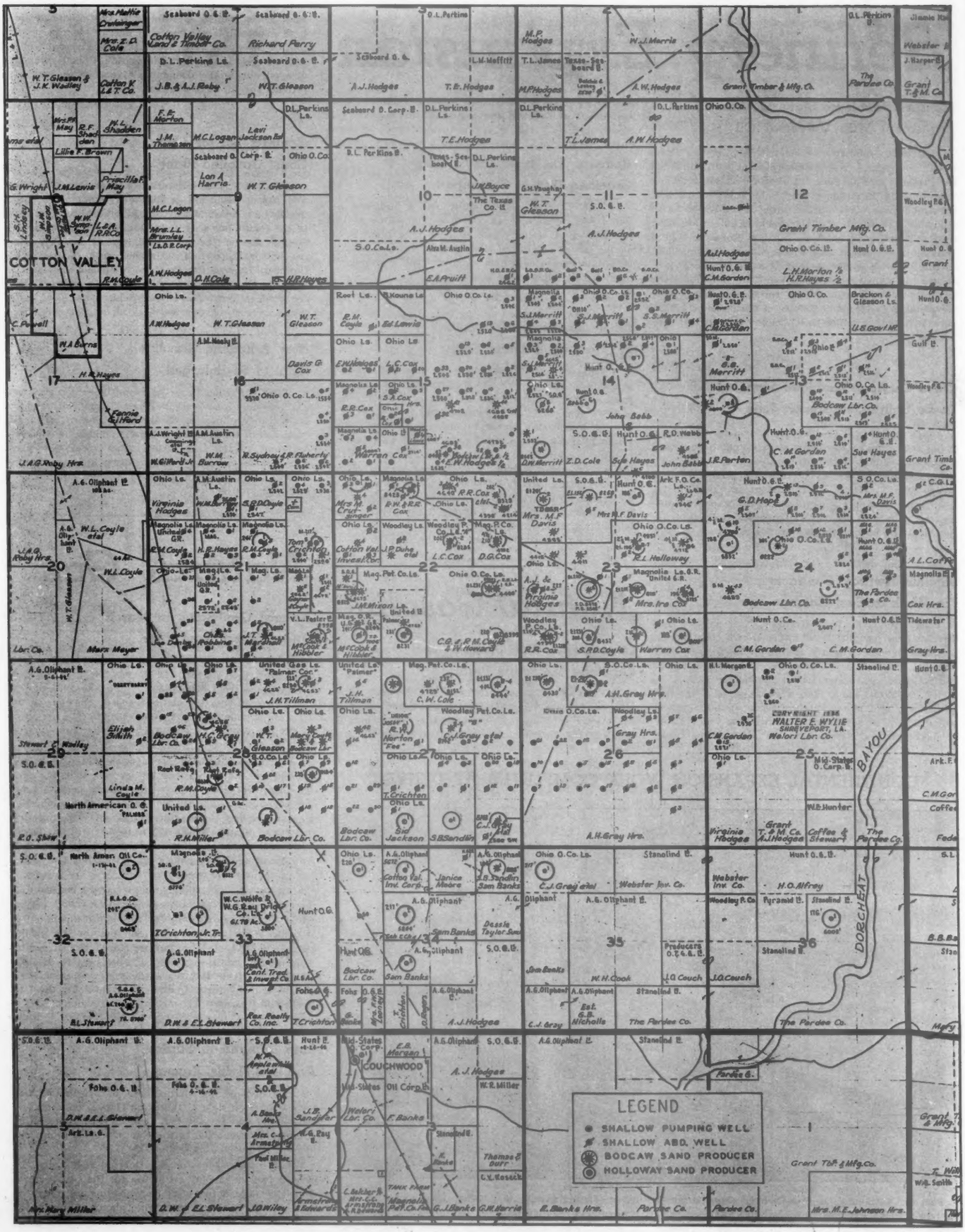
Their nominations for the Burrton field were 40,000,000 feet under May estimates; for the Otis field included 240,000,000 feet of dry, or pipe line gas compared with 484,000,000 feet in May. The balance of June needs from the Otis field will be in residual gas from gasoline "stripping" plants.

Fixing of gas allowables for the two areas was taken under advisement by the commission.

CONTINENTAL EXPANSION WORK COMPLETED AT DENVER



Part of Continental Oil Co.'s Denver, Colo., refinery where a $500,000 expansion program has just been completed, increasing the capacity to 2,700 bbls. Volume of the Kellogg cracking unit was nearly doubled by additions to the fractionating tower, gasoline sweetening equipment, waste-heat boiler, tankage, and to the other existing installations. When constructed in 1931, the refinery was chiefly used to supply the company's marketing outlets in the city of Denver alone. The expansion program, which has just been completed, will provide a supply for its outlets in a larger part of the Rocky Mountain area.



Cotton Valley district, Webster Parish, Louisiana

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Service on New Fields

COTTON VALLEY FIELD, NORTH LOUISIANA

Compiled by The Oil and Gas Journal, May 21, 1938

Approved name:

The Cotton Valley oil and gas field.

Geographic location:

The Cotton Valley field is located in Township 21n, Range 10w, Webster Parish, North Louisiana. It is situated about 15 miles from the north boundary of the state, and about 25 miles northeast of the city of Shreveport, La.

Principal cities and towns:

The town of Cotton Valley is a mile northwest of the edge of the field. Ten miles of gravel road connect the west edge of the field with U. S. Highway 80 at a point 25 miles from Shreveport and 5 miles west of Minden.

Railroads:

A main line of the Louisiana & Arkansas Railroad traverses the southwest section of the field, serving as a partial outlet for crude and refined products, and an incoming point for oil field supplies. It connects directly to Shreveport and to other railroad lines in Louisiana and Arkansas.

Supply houses:

Several supply houses operated by national companies are located in the field and in the nearby town of Cotton Valley. Two stores were recently built on the main gravel road in the west edge of the field.

Hotels:

Good but limited hotel accommodations are available in Cotton Valley, and Minden, and first class hotels are located 35 miles distant in Shreveport.

Schools and churches:

The town of Cotton Valley serves the area with a consolidated school and churches.

Power:

Louisiana Public Service Co. serves the town of Cotton Valley with electrical power and some lines extend into the field.

Water:

Sufficient water suitable for drilling is available in shallow sands in the field.

Fuel:

Large gas reserves in the field guarantee a cheap and ready fuel for power and heat.

Contractors:

A number of drilling contractors operate in the field, equipped with heavy modern rigs to drill to the deepest sand now productive in the field.

DEVELOPMENT

History of the field:

The original discovery in Cotton Valley was a gas well drilled by Dr. R. D. Webb on the Merritt tract, section 13-21-10. The well was completed in 1922 in the Blossom sand or Buckrange sand of the Upper Cretaceous. Following this discovery, a small gas area was proven, and surrounding it, a circle of oil wells was completed on the flanks of the structure. An attempt by operators to cause oil migration inward to the gas area by blowing gas wells failed, resulting only in a waste of natural resource.

Rich gas production was discovered in 1926 in the anhydrite zone of the Glen Rose at 4,380 feet. In 1928 oil was first produced from underlying sands of the anhydrite zone, but all oil wells in that horizon have been abandoned at this time.

The current importance of Cotton Valley dates from the discovery of oil and gas in deep sands. Ohio Oil Co. No. 6 Holloway was drilled to a total depth of 8,496 feet where prolific distillate and gas production was encountered. The well, however, was plugged back and completed August 25, 1936, in a sand at 5,550 feet, making an initial production of 21 barrels per hour on a three-eighths inch choke. The sand is named the Holloway sand, and occurs in the Travis Peak formation.

Subsequent development found the Holloway sand unproductive in surrounding wells, so that the deep sand, named the Bodcaw sand was the object of drilling operators. This horizon, lying in what is termed the Cotton Valley formation, has been proven over an extensive area, and no dry holes have been encountered to date.

Recently, the Holloway has proven productive in a number of wells, so that operators are testing that sand for possibilities of oil production, before drilling deeper to the Bodcaw sand.

The first producer in the Bodcaw sand was Ohio Oil Co. No. 1 Bodcaw, Account 4, completed on January 6, 1937, for 312 barrels of distillate and an estimated 3,000,000 feet of gas. The sand was topped at 8,172 feet and total depth of the well is 8,196 feet.

Present producing wells:

The shallow Blossom sand is currently producing in 60 wells, all of which are pumping. A large number of wells in this shallow horizon have been abandoned. The Holloway sand has 11 producers to date, and a number of tests have proven the intermediate sand unproductive, going deeper to the Bodcaw sand for completion. The Bodcaw sand has 42 producing wells.

Current drilling operations:

At the present time, 25 rigs are actively drilling in the field.

Production:

Daily average production in the deep Bodcaw sand is regulated by

Service on New Fields

the gas produced; the allowable being 66,000,000 feet. The light gravity oil produced with the gas averages 6,000 barrels, including 3,500 barrels of distillate. The Holloway producers are prorated to a total of 4,000 barrels per day, and Bodcaw and Holloway crude is classified together as Cotton Valley light. In the shallow Blossom sand, pumping produces about 110 barrels of heavy crude daily.

Accumulative production to May 1, 1938, is as follows: Blossom sand, 14,555,055 barrels; Glen Rose anhydrite, 350,000 barrels; Holloway sand, 561,907 barrels, and Bodcaw sand 1.712,851 barrels.

Allocation of production:

Allowable production in the Holloway and Bodcaw sands is restricted. The Holloway sand is currently given 4,000 barrels per day, divided among 11 wells on an acreage-potential basis. Acreage is given 75 per cent, weight and potential, 25 per cent. The sand is being developed on a 40-acre spacing rule.

The Bodcaw production is determined by the total marketable outlet for gas as represented by takings of United Gas Pipe Line Co., and by needs for plants, camps, drilling fuel and repressuring. This total allowable is divided among the wells according to acreage and bottom-hole pressure, with acreage given 75 per cent of the total. The spacing rule for the Bodcaw sand is 80 acres.

Operating companies:

The companies which hold production or are actively drilling in the field include: Hunt Oil Co., Fohs Oil Co., Magnolia Petroleum Co., Midstates Oil Corp., Morgan and others, North American Consolidated Oil Co., Ohio Oil Co., A. G. Oliphant, W. G. Ray Drilling Co., Stanolind Oil & Gas Co., Union Producing Co. and Woodley Petroleum Co.

Future development:

Offset requirements in both the Bodcaw and Holloway sand presage the continuation of drilling undiminished for the remainder of the year. It is expected that new rigs will be moved into the field if any appreciable outpost production is discovered. Predictions of the ultimate number of producers in either the Holloway or Bodcaw sands is impossible; the first because of its irregularity, and the second because of its unknown extent.

OPERATING PRACTICES

Drilling problems:

In drilling to the 8,400-foot Bodcaw sand, the operator is faced with the usual problems encountered in deep drilling. High pressures require the close check of muds as the test approaches the deep sand. Further difficulties are met in high bottom-hole temperatures of about 240° F., requiring additional care in mud control and cementing jobs.

Type of equipment used:

The heaviest types of standard drilling equipment are used in drilling all tests in the field. The typical drilling rig includes a 136-foot derrick, three 325-horsepower steam boilers and two heavy mud pumps. Steam rigs are used altogether in the field. Hydraulic brakes on the drawworks and blowout preventers are also standard equipment.

Muds:

For the first few thousand feet, drilling tests make their mud requirements, but artificial muds are added after setting the second string of casing. Mud is usually carried at 9.4 to 10 pounds to 6,500 feet and increased to 10.3 and as heavy as 10.7 when approaching the deep sand. Likewise, drilling mud is increased in viscosity from 23 to about 26 in the deeper drilling. Vibrating screens are used on nearly all rigs.

Casing programs:

A string of 13⅜-inch surface casing is set at about 550 feet. The Bodcaw wells have an intermediate string of 9⅝-inch casing set at about 6,000 feet, and a 7-inch oil string is set either on top, in or through the Bodcaw sand. If a well proves productive in the Holloway sand, the oil string is set on the 5,550-foot sand body.

Drilling speed:

A Bodcaw well is completed approximately 90 days after spudding in, while the average time to drill a Holloway producer is 30 days. Good drilling time is made down as far as the Lower Travis Peak, where hard digging begins.

Completion methods:

Most of the Bodcaw wells have casing set above the sand, while a few have it set in the sand. From 20 to 42 feet of sand is taken in the Bodcaw wells. Six wells were completed through perforations shot through casing set on bottom, but the practice is not general. With the exception of the gun-perforated wells, which gave unexplained difficulty in completing, the Bodcaw wells wash in very quickly, and never require swabbing. Holloway wells, particularly those with tight sand, often require considerable swabbing to flow. The entire sand section, averaging 11 to 14 feet, is taken. They are completed with an open hole at the bottom.

Producing practices:

Holloway wells produce with a gas-oil ratio ranging from 700 to 2,300 feet per barrel, and average 1,100. Separators are held at about 20 pounds. Wells in the Bodcaw sand show considerable variation in gas-oil ratio, depending on the rate of flow. The average is about 12,000 feet per barrel, but the ratio is larger when the well is choked in to small production, and very excessive when opened on a large choke. Surface separators are operated at 400 pounds in most cases, and one operating company is planning the installation of a higher pressure stage separation unit. The practice among some operators is to concentrate the production of a number of wells in one bank of separators and lease tanks. High vapor loss is suffered in handling the high gravity Bodcaw crude, running as high as 20 per cent in many cases.

Outlets:

Three oil pipe lines and one gas line serve the field. The oil lines are operated by Standard Oil Co. of Louisiana, 3-inch; Magnolia Pipe Line Co., 4-inch; and Arkansas Fuel Oil Co., 6-inch. United Gas Pipe Line Co. purchases all gas moved out of the field, with the exception of 3,000,000 feet per day, used in repressuring the nearby Haynesville field.

In addition to the pipe lines, three loading racks in the field serve as a tankcar outlet for crude and refined products.

Refining and natural gasoline manufacture:

Premier Oil Refining Co. of Texas operates a new 3,000-barrel skimming plant, which processes the light distillate production in the manufacture of special naphthas and solvents.

Two natural gasoline plants are located in the field. United Gas

Service on New Fields

Pipe Line Co. operates a 20,000-gallon absorption plant, and Ohio Oil Co. operates a 2,000-gallon absorption plant.

Bits used:

Almost all drilling in the field is done with rock bits, with the average Bodcaw well requiring 80 to 90 bits. Some very hard formations are encountered below the top of the Travis Peak.

Spacing practices:

Since the Bodcaw sand is developed on an 80-acre spacing rule, and the Holloway sand on a 40-acre unit, most operators stake locations according to the 80-acre plan. The common practice at present is to drill to the Holloway to determine whether or not it is productive. If so it is completed in that horizon and a second test is drilled on the 80-acre tract with the practical certainty of making a Bodcaw well in case a second Holloway well on the 80-acre tract cannot be completed. This method takes advantage of the 40-acre rule for the upper sand, at the same time safeguarding the 80-acre status of a Bodcaw producer.

GEOLOGIC DATA

Type of field structure:

The Cotton Valley field is the result of a perfect "text-book" anticlinal fold. Closure on the Blossom sand is 80 feet, and on the Massive anhydrite, 220 feet.

Holloway sand:

The Holloway sand section consists of three or four different sands, only one of which is producing at present development stage. The sand is deltaic in deposition, lying between the continental and marine deposits above and below. As a result, it is variable in character, and its structure cannot be predicted. It produces in the northeast and southwest sections of the field, and numerous wells drilled in the other sectors have found it dry. While fairly clean in some spots, it is generally a silty, tight, fine-grained sand with a porosity averaging 20 per cent. It is overlain by a very hard caprock of dolomitic lime, which serves as a good marker. The sand is located in the top of the Travis Peak formation.

Bodcaw sand:

The Bodcaw sand section, located in the Cotton Valley formation, consists of a main sand body and seven stringers, termed as A, B, C. D, E, F and G sands, named progressively downward. The main Bodcaw sand occurs between the D and E stringers, and is the only sand to be opened to production thus far, all stringers being cemented off. The sand is very uniform through the field, averaging 42 feet in thickness. It is clean and fine-grained, with an average porosity of 19 per cent. The top of the Bodcaw sand varies from 8,049 feet in the highest well to 8,589 feet in the lowest to date, and production in the two extreme wells is practically identical. Its extent is not known as no dry holes have yet been encountered in that section.

Proven area:

The Bodcaw sand, while not yet limited by production failure, is conservatively estimated to be productive over an area of 14,000 acres. This places the reserve total at about 55,000,000 barrels of light crude, of which only 1,712,000 barrels have been produced to May 1. Over a period of 17 months' production, no appreciable pressure decline has been noted in the reservoir. The vast gas reserve which must lie in the reservoir defies accurate estimation.

On the other hand, the Holloway sand, because of its erratic deposition and unpredictable extent must be given an estimated reserve based on the actual acreage already proven. This total, at present being about 500 acres gives a total reserve estimate of 2,500,000 barrels, based on a conservative estimate of 5,000 barrels per acre. The sand averages 11 feet in thickness.

GAS AND CRUDE CHARACTERISTICS

Gas:

The Bodcaw gas is relatively lean, averaging from .38 to .48 gallon per 1,000 feet of 18-pound natural gasoline.

Distillate:

The high gravity Bodcaw white oil enjoys a premium among purchasers. It is successfully processed in a blend in the heavier crudes. Its analysis, typical of the field is as follows:

Gravity	60.5
Flash	B.R.T.
Vis. at 50° F.	30
Pourpoint	below 0° F.
B.S.&W.	nil
Sulfur, per cent	0.015
Color	15
Overpoint, °F.	90
68.2 per cent, at °F.	270
14.4 per cent, at °F.	486
8.2 per cent, at °F.	588

	Gasoline	Kerosene	Gas oil	Residue
Yield, per cent	68.2	14.4	8.2	6.8
Gravity	64.8	48.1	42.4	37.6
Flash, °F.	...	145	220	330
Fire, °F.	..	...	250	365
Cold test, sec. below 0° F.	...	...	35	58
Sulfur, per cent	0.002	0.018	...	...
Color	30	23	straw	black
Loss, per cent	2.4	...	...	...
A.S.T.M. distillation:				
I.B.P., °F.	104	365	485	...
50 per cent, °F.	224	426	534	...
Endpoint, °F.	394	525	620	...
Rec., per cent	98	98	97	...
Doctor	sweet	sweet	...	...
Octane No.	55.5	...	...	...
Corrosion	O.K.	O.K.	...	...

Crude	
Gravity	50.8
B.S.&W.	trace
Pourpoint	below 0° F.
Color	green
Sulfur, per cent	0.11
Salt	nil
I.B.P., °F.	114

Cuts	Yield
Gasoline	41.7
Kerosene	15.0
Gas oil	6.6
Topped crude	35.7
Heavy gas oil	(31.3)
Fuel	(4.4)
Loss	1.0

	Gasoline	Kerosene	Gas oil	Topped crude	Heavy gas oil	Fuel
Gravity	67.1	47.1	42.8	34.1	40.4	20.5
I.B.P., °F.	118	378	462	...	166	...
50 per cent, °F.	244	440	550	...	638	...
90 per cent, °F.	339	490	624	...	*716	...
Endpoint, °F.	396	516	646	...	*716	...
Rec., per cent	98	98	95	...	90	...
Color	30	16	straw	...	dk. straw	...
Doctor	sweet	sweet	...	...	...	...
Corrosion	O.K.	O.K.	...	...	...	...
Flash, °F.	...	167	230	335	...	340
Fire, °F.	...	...	280	380	...	375
Sulfur, per cent	0.019	0.032	0.12	...	...	...
Octane (C.F.R.)	43.5	...	...	...	...	...
T.E.L. req.	...	...	...	...	...	...
Thermal vis.	...	410	...	...	...	...
Vis. at 100 SU	...	...	36	740	...	...
Vis. at 210 SU	...	...	...	45	...	85
Pourpoint, °F.	...	...	10	90	...	...
B.S., per cent	...	...	...	0.4	...	...
Diesel index	...	...	80	...	...	...
Aniline No., °C.	64.8	79.8	86.8	...	91.8	...

*Cracking.

INTERNATIONAL NEWS

Field Camps in Venezuela Raising Living Standard

The dwelling accomodations, educational institutions and recreational facilities being provided for oil field workers in Venezuela are converting the field living standard from the promiscuous disorder of early exploration to a permanent, comfortable basis.

The transition has not been as rapid, perhaps, as could be expected in a more densely populated country. But, considering the distance of Venezuela from sources of supply, naturally the first thought was given to development of the country's resources. Withall, the benefits to Venezuelans in general has been greater by prosecution of a program of first developing the resources.

All the major producing and exploration camps in Venezuela are now being equipped with comfortable living quarters for the native workers. Married and single employes are being housed in a manner totally unfamiliar to the average Venezuelan. In general, the houses finished and under construction are buildings divided into two, four, six or more apartments consisting of two or more rooms with bath and toilet inside. Electricity is provided, running water, concrete floors, laundry, porches and landscaping. The inhabitants are being encouraged to care for shrubs, flowers or garden patches. The school buildings provided for children of the Venezuelan workers are well appointed and instructors are drawn from the ranks of educated Venezuelans. An effort is being made to incorporate the best points of American and English educational programs into the system which retains many of the Venezuelan traditions. The entire effort of oil companies along educational lines is directed to making the children better citizens. President Lopez Contreras is given major credit for efforts to elevate the educational standards. Educational periods for the mature workers on government projects are compulsory, educators visiting gathering points regularly.

Recreational Facilities

In addition to the housing and educational programs conducted by the oil companies, recreational facilities are being provided. Every camp has its baseball field and grandstands. Native Venezuelans are particularly adept at baseball and have taken to the American game with vigor. The intercamp league standings are followed with an enthusiasm which compares with the World Series. Playgrounds equipped with swimming pools, swings, slides, bars and other facilities are provided in convenient locations for the camps.

Most of the permanent camp construction work at present is confined to the Lake Maracaibo district where the three large Venezuelan operators, Mene Grande Oil Co. (Gulf); Lago Petroleum Corp. (Standard of New Jersey) and Venezuela Oil Concessions (Shell) have their operations concentrated. Counterparts of the program are under construction and planned at Carapito, base of Quiriquire field operations and at Pedernales. Mene Grande Oil Co. acquired land for a large camp at Oficina several months ago and when that field reaches the extensive development stage living accomodations will be provided.

Sea wall in front of camp at Lagunillas is now 7 or 8 feet below water level

Not a small part of the benefits extended oil field workers in Venezuela by the companies operating there is a camp commissiary rented to local merchants. The leases specify that all products must be priced below the prevailing quotations outside.

Employes' credit unions are being created. Policies of the unions, administration of loans and other business details are handled by Venezuelan officers. Instances have been found among employes where loans from private Venezuelan sources bore interest at rates eliminating all hope of liquidation.

Because of the considerable revenue obtained directly or indirectly from oil companies, Venezuelans have no property tax. Their only taxes are paid in import duties on various foodstuffs, building materials, clothing and other commodities and stamp taxes. There is a fertile field for small industries in Venezuela.

The country needs a variety of small manufacturing industries including textile mills, dairies, building goods factories and suitable material is available for production of cement. Highway construction in addition to the tremendous consumption in the oil fields ranks Venezuela high among South American cement consumers.

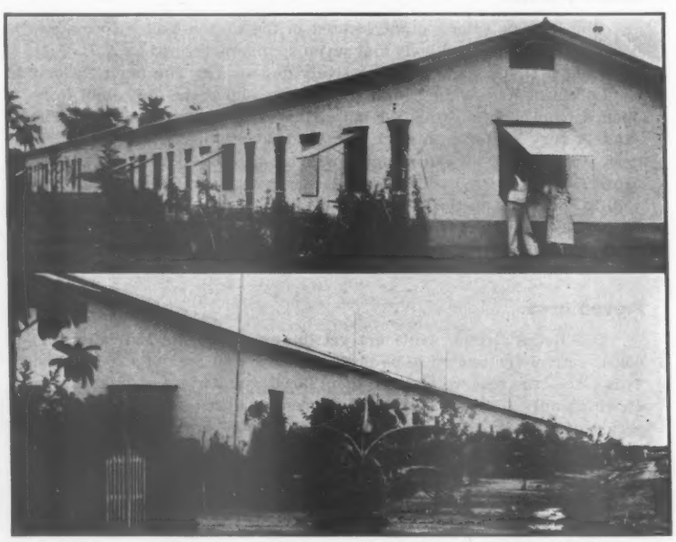
With industrial developments in Venezuela attaining a more permanent nature the country likely will be supplied with the hundreds of small industries it needs providing capital is not frightened away. President Contreras holds power to continue his program of improvement of living conditions, communications, highways and industries, but steps must be taken to assure capital of welcome.

Relations between the government and the oil companies will determine the future of Venezuela. Venezuela's petroleum reserves are by no means inexhaustible. Time will come when it will be up to other industries to replace the revenue now accruing to the government from petroleum, for Venezuela can ill afford to overlook the opportunity of inviting supporting industries.

A foundation has been laid in Venezuela for a prosperous nation by the oil companies. Employment of thousands of Venezuelans is spread over 15 or 20 producing fields. Thousands more are engaged in complementary work such as construction of roads, buildings, in shipping and in overland transportation. Wages paid are considerably above the average and the oil companies are training Venezuelans to fill positions of skill and trust as rapidly as possible. Venezuelan drillers are being used almost exclusively by the American companies and most machine shop work is carried on by Venezuelans. Educated Venezuelans do much of the clerical work, some assigned to gauging, and tankers sailing from Venezuela ports are manned, except the ranking officers, by natives.

Some concept of the improvement program may be gained from expenditures for housing, schools and recreation grounds by the companies. It is roughly estimated that the combined programs involve expenditure of $5,000,000. Most of the capital has been spent and the workers are now occupying the quarters.

Duplex houses in Colonia Alegria; shrubbery and flowers planted by occupants



Apartment houses, Colonia Alegria, Lagunillas, for lower paid Venezuelans and their families; one large room and kitchen, etc.

ENGINEERING and OPERATING

In This Issue

SAN JOAQUIN DRILLING TIME IS REDUCED BY IMPROVED PRACTICES
By T. P. Sanders ..... *Page 44*

The San Joaquin Valley is one of the outstanding areas of the oil world due to its possession of seven deep fields in the development stage and the world's deepest well. In order to drill to these deep pay sands as economically as possible, operators have adopted practices resulting in reduced drilling time. These improvements include heavier equipment, greater weight on the bit, faster rotating speeds, new cementing practices, reduced moving time and smaller hole sizes.

ADVANTAGES RESULTING FROM PRESSURE MAINTENANCE OPERATIONS
By E. O. Bennett ..... *Page 48*

Defining pressure maintenance as the practice of returning gas to the oil-producing formation for the purposes of maintaining reservoir pressure and energy, the author states that the value of pressure maintenance has been proved, but it is used by relatively few operators. Its advantages are stated and include prevention of water encroachment, reduction of gas-oil ratios and saving of reservoir energy. Details are given regarding typical operations and equipment.

LARGE BRINE DISPOSAL SYSTEM IS OPERATING IN HENDRICKS FIELD
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The Hendricks field of western Texas, long famed for its high percentage of salt water production, now has the world's largest disposal system. The system has a rated capacity of 1,000,000 bbls. daily, water being disposed of in a series of natural caverns. Due to the large water-oil ratio unusual pumping problems are encountered.

CURRENT PRACTICES IN THE SELECTION OF OIL-FIELD EQUIPMENT
By Harry H. Power ..... *Page 65*

Although many equipment problems confront the producer today, much progress has been made in recent years. Here the author recites typical improvements in drilling and producing equipment, emphasizing the cooperation between manufacturers and oil producers that made this progress possible. Typical examples are cited, such as sucker-rods, tubular goods, pumps, derricks and rotary equipment.

SIGNIFICANCE OF THE TESTS OF PETROLEUM PRODUCTS: COLOR
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For the purpose of emphasizing the responsibility of the refining industry in specifying only those tests that are truly significant in the operation of machinery, the author discusses reasons for testing oil products and the comparative values of these tests. Here the usefulness of color tests on gasoline and motor oils are discussed.

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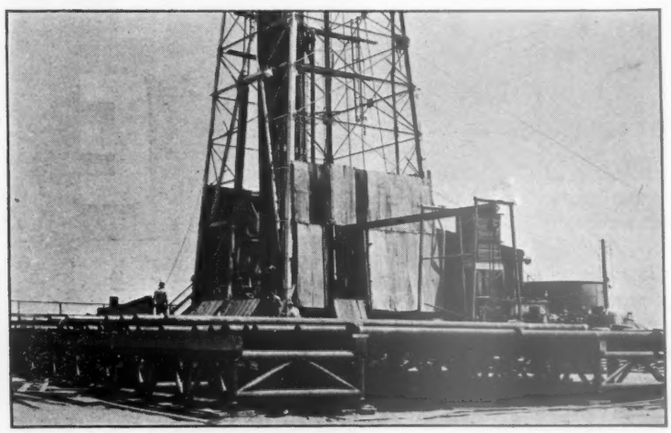
PROBLEMS FROM READERS—*By L. G. E. Bignell* ..... *Page 80*

Method by which extended derrick legs are bolted into the steel grillage that forms the foundation for Ten Section derricks

San Joaquin L
Reduced by I

By T. P. SANDERS

Since the early days of Kettleman Hills, California's San Joaquin Valley has figured prominently in deep-drilling affairs. At present the valley is more distinguished than ever before because of its possession of seven deep pools in the development stage, numerous deep wildcats, and the world's deepest well. Deep drilling has advanced so rapidly that there is a conspicuous absence of established practice. While much difference of opinion exists among the various operators, evidence shows that all have been quite successful in their attempts to streamline operations. The result has been a marked reduction in drilling time.



Type of portable drill-pipe racks being used by Shell Oil Co. at Ten Section field. Old pipe is used in their construction

Shell Oil Co.'s development of the Ten Section field serves to illustrate many of the improvements which have brought about faster drilling. For the past 18 months wells have been completed in this field with almost monotonous regularity. Drilling on a 6,200-acre lease, which apparently contains the whole of the prolific field, Shell has found sand conditions more regular than in other valley-floor fields. Of the 22 wells so far completed, 21 have been brought in for 2,200 bbls. or more per day, flowing through tubing with small surface chokes.

Drilling Time Lowered From 70 to 38 Days

Realizing there was an entire pool to drill up, which may require more than a hundred 8,200-foot wells, Shell field men have given a great deal of attention to drilling economies. Results are significant. Drilling of the discovery well required five months. Other early wells required an average of 70 days, but the last well was put on production in 38 days. For an 8,200-foot producer with two strings of casing cemented this is an exceptional record, especially when it is considered that safe practices were followed throughout and a straight hole was maintained.

The significance of the Ten Section record has been somewhat obscured because of the nearby Rio Bravo field, where 176-foot derricks and other super-sized equipment have established records which may be out of reach of the more conventional rigs. The five largest rigs in the world are all at work on the Rio Bravo structure. Four of these belong to Superior Oil Co., while the fifth was recently purchased by Union Oil Co. One of the Superior rigs has the distinction of having reached a depth of 9,887 feet in 30 days, which includes time spent in cementing surface casing. In establishing this record more than 1,100 feet of hole was made in a day, and there were times when a joint was "put down" in six minutes.

Part of the reduction in San Joaquin Valley drilling time has been due to greater weight carried on the bit and faster rotating speeds. In both of these respects Ten Section drilling is less spectacular than Rio Bravo drilling, because the size of equipment has limited the extent to which these benefits may be carried. For years the weight applied to the bit was carefully held near the minimum in order to avoid crooked holes. Recently a new practice has been adopted whereby weight is concentrated directly above the bit, and the drill pipe above this point is kept in tension. In this way the weighted bit is made to resemble a plumb bob on a string, and there is no bending of the drill pipe to misguide the bit.

In some cases bits are being weighted by lead sleeves on conventional-sized drill collars, but more often several heavy drill collars are used. At Ten Section it is common practice to use from 120 to 140 feet of drill collar of the largest diameter which will permit sufficient circulation. Using these the bit operates under a load of about 12,000 pounds. At Rio Bravo, however, Superior Oil Co. uses as much as 365 feet of heavy drill collar in drilling with its super-sized rigs. The bit is not subjected to the entire weight of these collars, but usually operates under a load of about 16 tons. In drilling the upper portion of the hole, 12 points are carried on the weight indicator, but as greater depth is reached this is reduced to 8 or 10 points.

Heavy Drill Collars Used

The drill collars used in most of the Rio Bravo holes weigh 147 pounds per foot. Approximately one-third of the total drill-collar weight is held up, while the lower two-thirds is applied to the bit. Several benefits are derived from this practice. It is said that the additional supported weight causes sufficient tension in the drill pipe to prevent excessive whipping at high rotary speeds. Also, the neutral zone in the drilling column, where tension replaces compression, occurs in the mass of drill-collar metal instead of in the drill pipe above. This feature tends to avoid failures due to vibrational stresses.

At the top of the group of drill collars a reamer is used by Superior Oil Co. This serves to keep the collars centered and aids in maintaining a straight hole. It can readily be seen that the long series of rigid drill collars with a reamer on top and the drill pipe always kept in tension would prove beneficial toward straight drilling. However, it is still found that care is necessary to prevent crooked holes. For this reason practically all deep-well operators make frequent vertical tests while drilling is in progress, and drilling speed is regulated by the results of the tests.

During the early part of the drilling, when soft formations make for long bit life, vertical tests are usually made by running the test instrument into the drill pipe on a wire line. When hard formations make frequent round trips necessary, time is saved by dropping an instrument down the drill pipe and removing it when the drill pipe is pulled. Most deep drillers attempt to keep their wells within 1 degree of vertical, since it is believed

View of Rio Bravo field where five of the world's larges

n Drilling Time y Improvements

Underfloor 12 by 12 rotary-table engine being installed at Rio Bravo. A jackshaft is included to reduce engine speeds

that faster drilling can be achieved by this practice. Great accuracy is required of test instruments, because a deviation of more than one-half of 1 degree is considered an indication that the weight on the bit should be reduced.

One of the most noticeable changes in drilling practice during recent years is the greatly increased speed of drill-pipe rotation. The Ten Section rigs use 8- by 9-inch underfloor rotary-table engines, and rotary speeds between 250 and 300 r.p.m. are maintained during much of the drilling. At Rio Bravo, where 12- by 12-inch underfloor rotary-table engines are used, speeds as high as 400 r.p.m. are not uncommon.

In the Ten Section and Canal fields, drag bits are used exclusively down to a depth of 7,000 feet at present. The remaining 1,200 feet is usually drilled with rock bits. Distinctly different is Superior Oil Co.'s practice at Rio Bravo, where the practice of using rock bits for the entire hole has been adopted. With the great weight used on the bits, it has been found that longer service is obtained with rock bits even in soft formations.

Shell Oil Co.'s experience in drilling on the Ten Section structure has resulted in several innovations. Among these is a time-saving method of cementing the water string and testing its water shut-off. This method has been used on six wells without a failure and each application has saved at least one day's drilling time. It is believed to be applicable to any field where water shut-off tests are required.

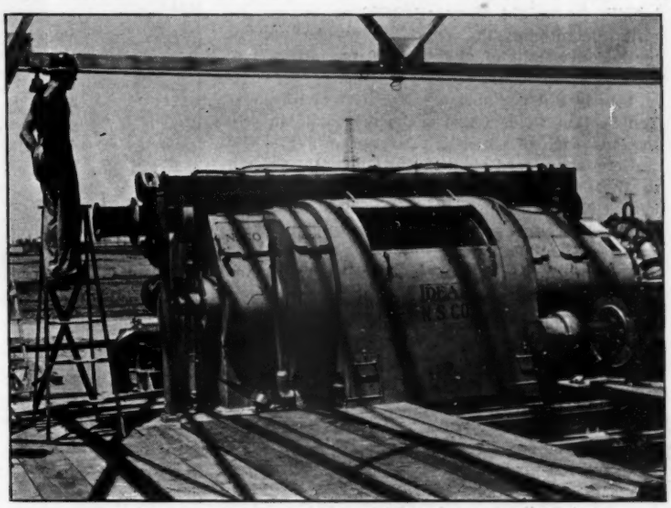
New Cementing Practice

Regulations of the California Mining Bureau require a tested water shut-off on top of the sand before the well can be completed. Since it is usually desirable to drill the sand to the chosen total depth before running the water string, it becomes necessary to install a bridge above the sand so that the water shut-off at the casing seat can be subjected to the usual drill-stem or swabbing test. Considerable trouble has been experienced at Ten Section in placing the bridge, so the new method was devised whereby the casing and bridge could be installed in the same operation.

After the hole has been drilled to the chosen completion depth, the water string is run. At the bottom of the string is the customary cement-whirler float shoe, but a 15-foot tail piece made of aluminum alloy has been screwed into the bottom of the shoe. When the casing is being cemented in place above the oil sand, about half of the slurry is discharged from the end of the tail piece while the other half is discharged in the usual manner from the whirler ports. This causes a solid plug of cement to extend below the casing shoe. After the cement has been given time to set, the casing shoe and about 5 feet of the underlying plug are drilled out. The water shut-off test can then be made with the remaining portion of the cement plug serving as a bridge to prevent the oil sand from producing. When the test has been completed, little time is required to drill out the bridge, because the aluminum-alloy pipe is nearly the same specific gravity as shale and is easily cut up and washed from the well along with the cement.

derricks are being used to drill to the 8,200-foot pay sand

Because of the efficient exploration work carried on in the early Ten Section wells, less coring has been necessary in the later completions, and practically all of it is accomplished with wire-line coring equipment. On the last well no cores were taken. The location was in a section of the field where it was known that no gas cap existed above the oil and no edge-water existed below the oil. In this section of the field the engineers depend on electric logging to determine the top of the sand and other important points. Also, the drillers are able to pick the top of the sand within 10 feet because of the noticeable difference in drilling sand and shale. Coring is still carried on in the central portion of the field in order to find the



One of world's largest drawworks, with a 10½-inch shaft, being installed on one of Superior Oil Co.'s Rio Bravo locations

contact between the oil zone and the gas cap. This information is used in casing off the high gas-oil ratio zone. In edge wells, where underlying edge-water is present or is suspected, coring is carried on to find the water level.

Smaller Hole Sizes Used

Some of the reduction in drilling time at Ten Section may well be due to smaller hole sizes. Present practice calls for setting 1,000 feet of 10¾-inch surface casing, 8,000 feet of 7-inch water string on top of the sand, and about 240 feet of internal and external flush-joint 5-inch liner. The completion depth averages 8,220 feet, so the liners are hung with about 20 feet projecting above the shoe of the water string. On edge wells, where there is a possibility that water trouble may develop relatively early, aluminum-alloy liners are installed. If it becomes desirable to shut off bottom water, these liners could be drilled up and the well plugged back.

Drilling mud is not given any special attention until a depth of 5,000 feet is reached, but thereafter its viscosity is maintained at 25 to 30 seconds while the weight is held at or near 75 pounds per cubic foot.

In a drilling campaign such as that at Ten Section, where a small number of rigs undertake to develop extensive acreage, moving time becomes a factor of great importance. The consideration given to this subject is disclosed by the fact that one of the large rigs was recently moved in 50 hours. This represents the total time which elapsed between the bringing in of one well and the spudding in of the next. Everything was moved except the derrick. When a Ten Section well is completed there is always another location waiting for the rig with derrick erected and pits completed.

Moving of equipment has changed decidedly since the beginning of the field. Equipment has been unitized wherever possible. Derricks were formerly dismantled. Now they are mounted on dollies and drawn to the new locations. Crown blocks are removed before the derricks are transported, since the heavy weight concentrated at the top would cause considerable strain in moving. Derrick foundations have undergone a complete change:

Concrete corner piers were formerly used, but now no concrete whatsoever is used under the derrick corners. Instead of concrete, a heavy steel framework forms the foundation for the derrick. This framework, or grillage, is supported at the corners by timber mats, which are made up of old 6-inch by 8-inch timbers. The grillage is made up of heavy I-beams and has cross members to support the rotary-table subbase, the underfloor rotary-drive engine, the auxiliary hoist, and the derrick floor. The derrick floor is elevated the desired height above the grillage through the use of extended legs on the derricks. These bolt into the grillage 8 feet below the floor level.

Use of the steel grillage as a derrick foundation is especially suitable in cases, such as at Ten Section, where the auxiliary hoists are mounted underneath the derrick floors and underfloor rotary engines are used. The grillage forms a sturdy foundation for these units and they can be installed in a minimum of time. Plans are underway in the Shell company for moving the derricks in the future with the grillage and underfloor drive equipment intact. This would mean handling a weight of over 100,000 pounds in one unit. In moving the derricks by the present method a weight of about 50,000 pounds is handled in the one unit.

Sturdy but portable casing racks are used at Ten Section field. These racks are made in two sections, each of which is mounted on skids. The sections are placed about 20 feet apart at the rig so that each supports one end of the casing joints. They are constructed from used drill pipe and are strong enough to eliminate danger of casing-rack breakdowns.

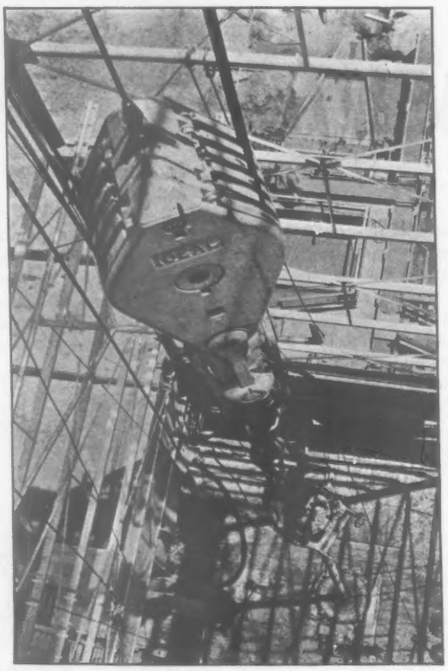
Drawworks in the Ten Section field are driven by 12-inch by 12-inch twin-cylinder steam engines. The 8-inch by 9-inch twin-cylinder underfloor steam engines drive both the rotary tables and the standby hoists. Steel 136-foot derricks are used. Steel subbases are used beneath the drawworks and drilling engine, but these are not mounted on concrete pads, as is customary. The subbases rest on old wooden engine blocks, and the drawworks and engine are bolted down by means of anchor bolts 8 or 10 feet long which are sunk into the ground and expanded.

The Rio Bravo field is conspicuous for having the largest equipment in the world. Not including the pumps, Superior Oil Co. uses three large steam engines on each rig. The drawworks is driven by a 14 by 14 horizontal twin-cylinder engine, the rotary is driven by a 12 by 12 underfloor twin-cylinder engine, and the standby hoist is connected to a second 12 by 12 engine. The underfloor engine drives the table through a jack-shaft which is used to speed up the rotary for a given engine speed. This shaft permits turning the table at 400 r.p.m. while the engine operates at 250 r.p.m.

The 176-foot Rio Bravo derricks have revived a rotary-drilling practice which was discarded years ago. When short kellys were used in the early days of rotary drilling, it was not necessary to stand the kelly in the rathole when a single joint was added to the drilling column. Instead, the single was placed in the rathole and screwed onto the bottom of the kelly. The single could then be raised and screwed onto the top joint of the drill pipe. When kellys became longer, this practice had to be discontinued because of insufficient room in the derrick. The new tall derricks give ample room, so Union Oil Co. has acquired a long rotary hose and revived the practice. By eliminating the use of the elevators on singles, several minutes are saved on each joint, which may amount to as much as two hours in the course of a day.

The new Union rig at Rio Bravo is also conspicuous for a new weight indicator, the first of its kind. This instrument makes use of a hydraulic chamber above the rotary hook. Pressure on the chamber is a function of the weight carried by the hook, and this hydraulic pressure is conducted by a flexible hose to an indicator near the driller where the load is read in tons.

Current rumor indicates that even larger rotary equipment will soon make its appearance in the San Joaquin Valley. Drilling of the 11,400-foot Rio Bravo wells is being accomplished by more rivalry among the companies than has ever before been apparent in California fields. There is some indication that the same rivalry may develop in drilling the 13,200-foot Wasco wells.



Looking down on a new 176-foot rig at Rio Bravo. The dead line, fastened to the traveling block, represents a departure from usual California practice

REFINERY TOPICS

(Continued from Page 35)

possible to set valves for variable service without upsetting other plant operations and that savings in water can be effected since the different departments need not change valve settings with line pressure changes to keep a constant flow. At this plant coolers and boxes are checked daily for water waste, which is reflected in outlet temperature of the water and the product, and daily flow output records are kept of all wells as well as 24-hour water pressure records.

After surveying the employer-employe status of modern industry, Mr. Bown concluded his paper with the prediction that "it seems reasonable to expect the pendulum will eventually reach a point where we have a more thorough understanding on the part of both employer and employe. Close personal contact with our employes and prompt consideration of problems arising from this personal contact should tend to develop and maintain harmonious relationships which are so essential to present day profits."

He described personnel administration as 'the policies and the method of administering an organization which have been found to enhance the value of the individual to himself and society, to encourage and perpetuate voluntary cooperation and to create and maintain a spirit of friendliness throughout the work relationship." After pointing out the responsibility of management in such a program, Mr. Bown stressed the importance of the foreman who is now "a leader rather than a driver." Regarding the foreman's position, he said, "It is no longer enough that a foreman should be selected only because of his intimate knowledge.... He must know how to lead his men. In this connection it will soon be found it is desirable to have the worker know why a job is done as well as how it is to be done. Modern foremen recognize this. The foreman must be in a position to discuss intelligently present day problems in economics especially as they relate to his own organization."

Mr. Bown also discussed annual reports to employes, similar to those for stockholders, to acquaint the former with facts about the company for which he works; treatment of seniority rights, hiring and discharging; employes' credit unions and other factors entering into the successful conduct of the relations between the employer and his employes.

In telling of the chemical engineer's place in oil refining, Mr. Fitzgerald said that his greatest contribution is a new point of view. "He accepts the fact that unit operations are not peculiar to any one product or industry." He cited how the bubble tower came from the alcohol industry; the pipe still as an adaptation of the water tube boiler; the inheriting of acid treatment and cracking from the early coal oil industry; hydrogenation which had been used in the hardening of vegetable and animal fats and in the liquefaction of coal; polymerization which is used in the manufacture of plastics, and the rotary vacuum filter which had been used for years in other industries for the filtration of such widely variant products as sugar and precipitated calcium carbonate. It is as much the chemical engineer's job to operate plants as well as to build them, he said. Of the two, operation is often the more difficult. The designer may not anticipate every difficulty that will arise in operation but the operator has to meet them with the plant the designer gave him. The knowledge which the engineer picks up about defects in design and operating problems is used to improve the next job.

"There is no doubt at all," Mr. Fitzgerald concluded, "that the development of the past 10 years are only a start. They are the forerunners of an age when crude oil will be the raw material to furnish chemicals and products unknown today. Catalytic processes in particular will be responsible for the greatest changes. The experimental data and fundamental science developed now will be invaluable to the oil industry tomorrow."

Treatment of Petroleum Products By Edeleanu Process Discussed

Treatment of petroleums or petroleum derivatives with liquid sulfur dioxide according to the patents of L. Edeleanu and his collaborators has found wide application in the refining industry during the course of about a quarter of a century. Much has been published in trade journals on typical Edeleanu kerosene treating and lubricant dewaxing installations and on the chemical and physical reactions involved. This material and the chemico-technological features of the process are described in a volume recently written by Dr. J. C. L. Defize, "On the Edeleanu Process." The volume contains 310 pages and several flow charts of typical installations. It is divided into the following chapters: the Edeleanu process, theoretical part and experimental part. In the latter chapter the Edeleanuzation of kerosene, lubricants and light petroleum fractions is described.

A copy of "On the Edeleanu Process" may be purchased through the Book Department of The Oil and Gas Journal at the established retail price of $7.50, express prepaid, and it will be forwarded promptly upon receipt of check or money for that sum. Where payment does not accompany the order, the book will be shipped express c.o.d. to avoid delay for the customer.

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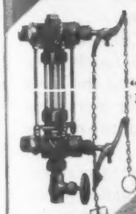

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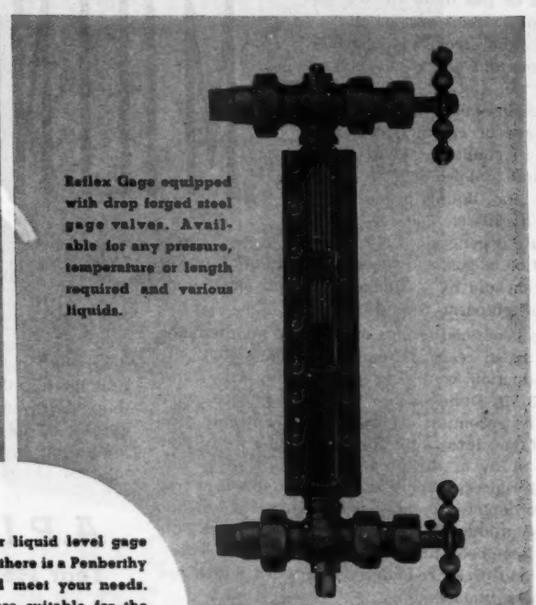

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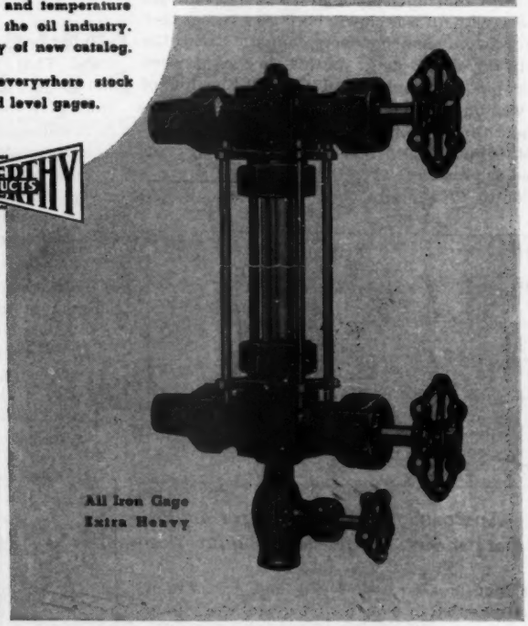

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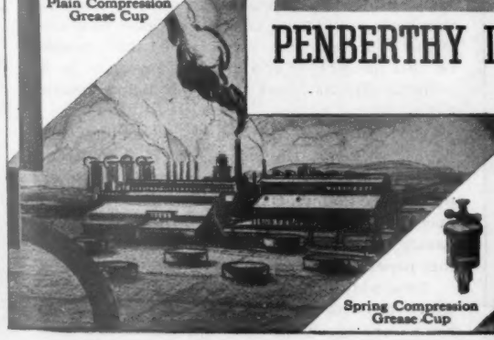

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By E. O. Bennett
Continental Oil Co., Ponca City, Okla.

A.P.I.—Presented at Mid-Year Meeting, Wichita, Kansas, May 24, 1938

PRESSURE maintenance is defined as the practice of returning gas from flush production to the formation for the purpose of keeping reservoir pressure and energy as near initial conditions as possible. It is distinguished from repressuring, which is the return of gas to producing formations which are partly depleted and from which both pressure and energy have been taken.

Pressure-maintenance operations are of extreme economic value in connection with high-pressure oil-producing zones where the liquid produced is oil or distillate. The "so-called" distillate is generally held in the formation as gas, and recovered as a liquid by condensation and by a change of the physical conditions of temperature and pressure.

The beneficial effects of pressure maintenance, or saving of reservoir energy in connection with oil production, were first advocated by I. L. Dunn. In 1903 Mr. Dunn successfully demonstrated what could be accomplished by the intermittent injection of gas into a shallow producing well. Continued study of the process was carried on, and in 1911 repressuring was conducted by injecting air into depleted or partly-depleted wells in Ohio, and the production greatly increased. Results obtained have been the basis of practically all repressuring and pressure-maintenance work which has since been undertaken.

In 1913 the importance of the energy in gas produced with oil was slowly becoming recognized. There were but few engineers connected with the oil industry at this date. At this time some work on back-pressure control and choking the flow of wells was undertaken. Results of producing rates and their effects upon gas-oil ratios were published in 1914, 1915, and 1916, but were not generally recognized or practiced.

Prior to 1913 gas in connection with oil was looked upon as a necessary evil, and it was then common practice to blow a well to rid it of gas in order to recover the oil. This former practice left millions of barrels of oil irrecoverable and lost in depleted sands.

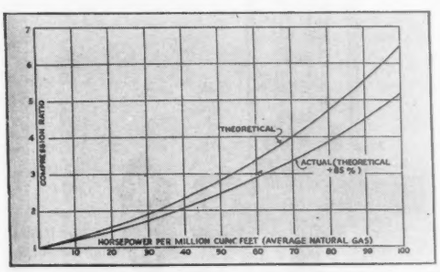


Fig. 1—Approximate horsepower per million cubic feet per day—single-stage compression

No consideration was given to the potential energy in the gas associated with oil, while its value for fuel purposes was ignored. Today the value of gas in connection with oil is known by all operators, and the prevention of its waste is to a limited extent obligatory under laws in some states. Fullest consideration of the maximum value of gas in connection with production of oil is given only by a very limited number of producers—other than by producing with gas-oil ratios which will meet legal requirements.

Today pressure maintenance is one of the most discussed but least practiced of any type of operation in the oil industry. Its economic worth, although proven, is admitted by only a small percentage of operators. The reluctance of many oil producers, with competent engineering staffs, to take advantage of proven recovery methods involving pressure maintenance is not easily understood. That "pressure maintenance is a controversial subject, not proven" is the reason many operators give for not considering it.

While some take this stand, other more progressive operators and producers are greatly adding to their reserves and economic gain by saving the energy normally lost. A study of some of the successful existing projects should be beneficial to those who are yet dubious.

The number of projects involving repressuring of old fields is limited. The number in which pressure maintenance of flush high-pressure production is carried on is even less.

More pressure-maintenance projects have been started during the past three years than during any other like period. Gas-oil-ratio regulations imposed by state regulatory bodies in the future will no doubt have much to do with placing this type of operation into effect, where it otherwise would not be considered.

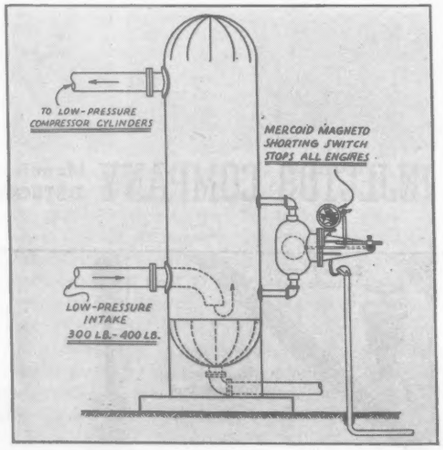

TO LOW-PRESSURE COMPRESSOR CYLINDERS
MERCOID MAGNETO SHORTING SWITCH STOPS ALL ENGINES
LOW-PRESSURE INTAKE 300 LB.- 400 LB.

Fig. 2—Scrubber for removing absorber oil

Several repressuring projects were started and kept in operation with various degrees of success up to 1916. From this date forward, systematic studies and surveys under the supervision of petroleum engineers were made, and excellent results have been obtained in increased recovery. Most operators were yet of the opinion that it was necessary to let the formation pressure dissipate before starting recovery work of this nature.

U. B. Bureau of Mines Bulletin No. 148, by J. O. Lewis, published in 1914, is one of the early publications on the use of air or gas for increasing oil recovery, and gives a good resume of the method as practiced up to that time.

In 1926 several major oil-recovery projects were started, and the first pressure-maintenance operations in connection with flush production were put in effect. Pressures above 1,000 pounds were first used by the Marland Oil Co. (now Continental Oil Co.) at Seal Beach, Calif. In this operation, pressures up to 1,800 pounds were used. Here gas was injected to maintain the pressure to prevent edge-water encroachment.

The next high-pressure operation was in the Sugarland field in Texas, where pressures of 1,350 pounds were necessary to return gas to the formation. This program was started in 1930, and is one of the most successful.

A project at Sulphur, La., has been in operation for some time, in which working pressures exceeded 2,000 pounds.

In November, 1936, gas was returned to the formation in the Tepetate field, Louisiana, with initial working pressures of 3,700 pounds.

Gas is being returned to a pool at Cayuga, Tex., with working pressures of 1,800 pounds.

During the early part of 1938 a pressure-maintenance project was started for returning gas to the Sundance sand in the Lance Creek pool near Lusk, Wyo. Four companies have pooled their interests in this project. The injection pressure is 860 pounds; 6,000,000 feet of gas is being returned daily.

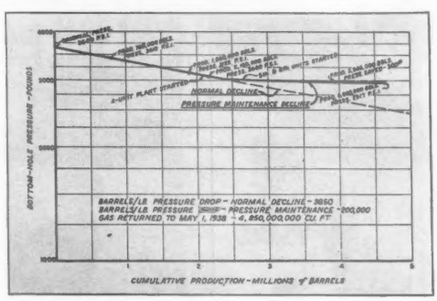
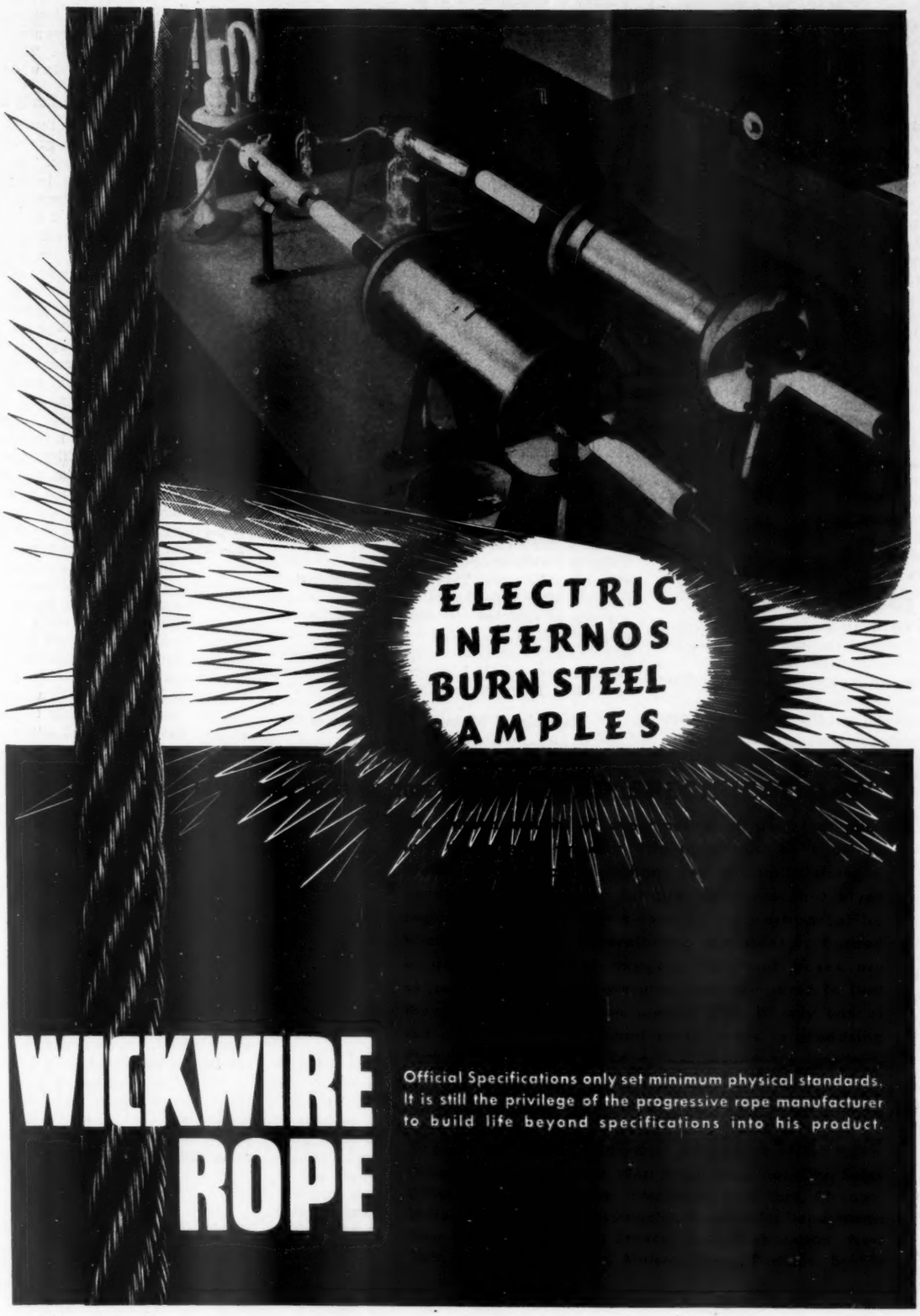

BOTTOM-HOLE PRESSURE - POUNDS
PRESSURE MAINTENANCE BEGUN
BARRELS/LB. PRESSURE DROP - NORMAL DECLINE - 3650
BARRELS/LB. PRESSURE DROP - PRESSURE MAINTENANCE - 200,000
GAS RETURNED TO MAY 1, 1938 - 4,850,000,000 CU. FT.
CUMULATIVE PRODUCTION - MILLIONS of BARRELS

Fig. 3—Relationship of bottom-hole pressure and cumulative production for Tepetate field

During the latter part of 1937 seven major companies worked out a satisfactory plan for returning gas to the producing zone in the Naval Reserve pool, Osage County, Oklahoma, which is under unit operation—the leases being owned by 15 companies. This project is discussed in detail later in this paper.

Two additional high-pressure pressure-maintenance projects are under consideration in Oklahoma—one involving the properties of four major


ELECTRIC
INFERNOS
BURN STEEL
AMPLES
WICKWIRE
ROPE
Official Specifications only set minimum physical standards. It is still the privilege of the progressive rope manufacturer to build life beyond specifications into his product.

companies, the other seven. One of these projects will require 1,600 pounds working pressure; the other, 800 pounds. The higher-pressure project is in connection with virtually flush production.

A project is being developed in Louisiana where the working pressure for returning gas will be 4,100 pounds. This will be the highest known pressure ever used for the return of gas to the formation.

Maintaining Pressure on Oil Zone

Practically all high-pressure oil-producing zones contain volumes of free gas above the oil, unless the pressure is so high that all the constituents of the hydrocarbon series lose their phase identity and the gas and oil exist as a substance which is neither liquid nor gas. In addition, there is always a definite amount of gas in solution under the conditions of temperature and pressure existing. The amount of gas in solution per unit of oil varies in different pools. It is dependent on the temperature, pressure, and chemical composition of both the oil and gas.

East Texas is a field in which the oil is not completely saturated. It contains less gas in solution than would be normally expected at the existing pressure and temperature conditions. This field is primarily of the water-drive type.

Other pools hold formation oil with varying amounts of gas in solution. A typical deep Gulf Coast field has 1,300 cubic feet of solution gas per barrel of initial oil at 3,600 pounds formation pressure; another has but 800 feet per barrel at 4,070 pounds. A pool in Oklahoma contains 701 cubic feet per barrel of initial oil at 2,829 pounds.

Flowing Production

Before any oil can be produced into the bottom of a well, a differential pressure between the well bore and the producing zone must exist. The magnitude of production is dependent upon the differential pressure created, the permeability and porosity of the sand, and the physical characteristics of the oil.

Under flow conditions, the pressure becomes less and less as the well bore is approached. As the pressure is reduced, gas comes out of solution from the oil, and expands to force the residual oil ahead to the point of reduced pressure. The permeability of the producing zone is a measure of the resistance to the flow of oil to the well bore. Formations of low permeability require greater pressure differentials to flow a given quality and quantity of oil than formations of high permeability. The porosity, however, may be the same.

In any particular formation, the slowest rate of flow from the well that will permit the oil to be efficiently lifted through the tubing flow string will generally be the rate which will liberate the least amount of gas from the oil in the formation near the well bore. Such rate will produce the maximum natural ultimate recovery.

The viscosity and surface tension of the oil in the formation are affected by the amount of gas in solution, both being lowered with increased amounts. By maintaining the viscosity and surface tension of oil at minimum values, the smallest differential pressure is required to cause a given volume to flow to a well bore, and the oil is produced with the least amount of energy and pressure reduction in the formation.

When gas is liberated from oil in a formation as it approaches a well bore, the gas expands due to pressure reduction, and occupies some of the pore space in the sand formerly occupied by the oil—thus imposing a further restriction to the oil flow, necessitating an increased differential to maintain the same flow rate.

As this process is continued, the gas-oil ratio of the well being produced also continues to increase. High gas-oil ratios cause inefficient flow conditions, high velocities, slippage in the tubing, and flowing by heads. Under such inefficient flow, much more energy is released than would normally be required to raise the oil. The release of such energy is accompanied by an excessive reduction of pressure in the entire producing formation, and the accelerated encroachment of edge and bottom water. It also leaves the residual oil in the formation more viscous, and with higher surface tension and adhesive qualities.

With reduced formation pressures, oil at remote distances from well bores becomes more difficult to move due to decreased energy and increased viscosity; and, if the pressure reduction is continued for sufficient time, much of the oil between

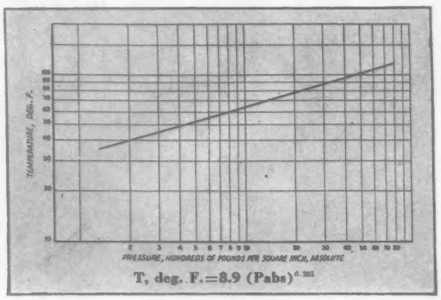


Fig. 4—Temperature at which hydrates will freeze

wells will remain unproduced, and premature abandonment—with resulting loss of ultimate recovery—will take place. This has been demonstrated by the drilling of producing wells in the center of a group of depleted and abandoned wells. The early return of gas and its continued injection will eliminate such conditions and greatly increase ultimate recovery. In addition, the gas saved will be available for future market.

Methods of Maintaining Pressure

Unless there is a definite water-drive associated with the oil in the formation, it is impossible for original reservoir fluids to compensate for the shrinkage due to oil and gas produced. In pools where oil is produced with inherently high gas-oil ratios, a volume in the formation equivalent to several barrels may be voided for each barrel of oil produced.

If water does not move in to occupy the space voided, then both the gas above the oil and the solution gas in the oil will expand to occupy such space, with a resultant drop in reservoir pressure.

If bottom and edge water under hydrostatic pressure move in as the formation is rapidly reduced, certain wells will be overtaken by water, and may have to be prematurely abandoned—leaving oil near them irrecoverable.

Fortunately, bottom and edge water under hydrostatic pressure do not move in uniformly; and will finger, channel, or cone up nearest the producing wells where the differential pressure is greatest. The greater the producing rate, the greater will be the coning effect. The uneven approach of water will cause oil to be blocked off and retained in the formation, and to be made irrecoverable. After water has established a channel to a well, it is difficult to retard. Squeeze cement jobs are not able to remedy the conditions.

The water-oil contact may be partly controlled by governing the flow rate of the oil from individual wells that are affected. A thorough knowledge of the producing characteristics of each and every well is necessary. Formation pressures throughout a pool are of utmost value in analyzing subsurface conditions and changes.

The best-known means of maintaining pressure in any reservoir is to produce the oil with as low a gas-oil ratio as possible, and to start—in the very early life of the pool—to return all gas produced. In this manner the pressure drop can be reduced to nearly that which would occur if only the net barrels of denuded oil were produced. The time to start returning gas is just as soon as the drilling of additional wells defines a pool of sufficient size to justify the operations. This will generally be determined after five or six wells have been drilled.

Gas Injection at Early Life of Pool

Many operators state that it is impractical and uneconomical to return gas to a pool while the formation pressure is high. This idea is erroneous; as the energy required to compress gas is not governed by the final pressure, but by the number of ratios through which it is compressed. It takes no more horsepower to compress a given volume of gas from 300 pounds per square inch absolute pressure to 3,000 pounds per square inch absolute pressure than it does to compress the same volume from 30 pounds absolute pressure to 300 pounds absolute pressure. Dividing the final pressure by the initial pressure gives the compression ratio. Figure 1 shows the horsepower required to compress 1,000,000 cubic feet of gas per day through different compression ratios.

By starting in the early life of a pool, gas may be made available from high-pressure traps or absorbers at pressures sufficient to eliminate one or two stages of compression and the corresponding machinery cost. For such intake pressures, one or two additional stages will be sufficient to compress the gas for return to the formation against any known pressure. The highest known pressures used for the return of gas were at the Tepetate field in Louisiana, where Continental Oil Co. operated with gas up to 4,600 pounds per square inch.

Gas taken off traps under high working pressures contains mostly methane and ethane. Very small quantities of condensable vapors are removed, and the gas is too lean in gasoline content to process economically in a gasoline plant. Such gas may be taken directly to high-pressure compressor intakes for direct return to the formation. This method of operation reduces the size of the gasoline plant required, as it will only have low-pressure gas to process. The small amount of light recoverable ends carried out with the high-pressure gas will ultimately be recovered, and the return of these ends provides a washing action in the sand tending to increase ultimate recovery.

High-Pressure Plant Design

Gas may be compressed to high pressures with no greater dangers or hazards than are present when compressing to ordinary discharge pressures of from 300 to 500 pounds. Proper design must, of course, at all times be used. Care must be used in design to provide for creep stresses due to temperature as well as normal stresses set up by pressure. Vibration in stiff connections must be given special consideration.

General practice in high-pressure installations above 2,000 pounds per square inch, where weather conditions are not too severe, is to locate all operating valves and checks outside the compressor room and above normal grade. Keeping all lines above grade makes inspection easy, and all chances of failure from external corrosion are eliminated.

Check valves are used in all intermediate and high-pressure discharge lines between the compressor cylinders and discharge headers to prevent a high-pressure back flow into the compressor room in the event of a connection failure. All lines to compressor cylinders are securely kick-braced to the machine foundations to prevent failure from vibration. Check valves are also used at all input wells to prevent a well blowing wide open in the event of failure of a field line.

Piping of proper weight and strength must be used, and care must be exercised in selecting steel of suitable qualities for welding for both strength

and tightness. On heavy-walled pipe it is necessary to use double- and triple-beaded welds. Either acetylene or electric welding may be satisfactorily used. Care must be exercised at all times to use only expert welders, and all work must be carefully inspected and tested. All welds should be stamped with an identifying mark, as a check on the individuals performing the work. . . . .

It is good practice on all high-pressure work to design a safety factor of between 3 and 4, and to make cold-water tests with pressures of at least 200 per cent of normal working load. Test pressures of this magnitude should be held on the system for a sufficient time to permit very careful examination of every joint or weld in the entire system.

Care must be taken to eliminate all air pockets from the system when filling with water for testing. This may be easily done by burning or drilling small holes in the piping at the top of all loops or high points; such holes are readily filled by welding on completion of the air elimination. Any air trapped in piping or chambers when testing at 200 per cent of normal working load would release energy at a rate which would do considerable damage in the event of a failure at any part of the system during a test.

Safety Devices

Adequate safety devices in a high-pressure plant are essential. Protection against low-pressure cylinders taking in a quantity of absorber oil from the gasoline-plant residue line is accomplished by using a scrubber, as shown in Figure 2.

If a quantity of absorber oil should accidentally pass to the scrubber, the float rises and tips the mercoid switch on the lever arm. This switch short-circuits all engine magnetos in the plant, stopping them before the oil can reach the low-pressure cylinders and cause their destruction. Intermediate scrubbers are equipped with blow-off drains, and should be blown down frequently.

All compressor discharge lines are equipped with frangible, disc-type, blowout heads, which have been found more reliable than pop valves on high-pressure discharge, due to freezing which occurs in the valves. The disc flanges are located at convenient heights for ready replacement of discs in the event of rupture. Discharge lines above the discs are carried above the roof of the building. Care must be used in positioning safety heads on pressure vessels on account of the forces exerted when rupture occurs. Suitable bracing must at all times be provided.

By-pass lines below the safety heads are used on all compressor cylinder discharge lines to facilitate starting. These lines are equipped with plug cocks. Lubricated-type plug cocks sealed with high-temperature grease have been found more satisfactory than valves for high-pressure gas work.

Results of Pressure Maintenance

It has often been said that pressure maintenance is a highly controversial subject. This may be true, but it is largely on account of the unwillingness of some operators to give proper consideration to existing physical facts and their relations to known principles of production practice. Results shown later in this paper stand as evidence of what can be, and has been, accomplished by those operators who have been willing to take advantage of saving energy in connection with production operations.

Certainly, when 200 per cent of the recovery normally expected by operation without pressure maintenance has been made with pressure maintenance, and an additional 100 per cent more may be produced in a well-known pool after 11 years of operation, no reason is seen for calling the system and results controversial.

The results of early pressure maintenance are well shown by data obtained in Continental Oil Co.'s Tepetate, La., operations. Figure 3 shows the relationship between bottom-hole pressure and cumulative production since the start of development in the field. A part of the curve shows the relationship between formation pressure and cumulative production before pressure maintenance was started, and the remaining part shows the relationship after pressure maintenance had been instituted.

The initial bottom-hole pressure in the Tepetate pool, at 8,313 feet, was 3,640 pounds per square inch. After 789,240 bbls. of crude had been produced, bottom-hole pressures were taken, and found to be 3,410 pounds. It was assumed that the energy producing oil in this pool was principally from the gas in solution and the gas above the oil. While water was present under the entire pool, it was not believed to have been the principal motivating force behind the oil. With the above assumption, the pressure values were plotted logarithmically, with the cumulative oil volumes on plane coordinates. A straight line was drawn through the two points, and extended. The solid line represents the actual production-pressure-decline curve. Pressures were again taken, and plotted as shown. When the production was 1,880,000 bbls. the pressure was 3,125 pounds; and, again, when production was 2,160,000 bbls., the pressure was 3,040 pounds.

Both of these points fall on the original line extended. With this form of check against the original assumptions, had production continued without pressure maintenance, the normal decline would have followed the dotted section of the straight line, extended.

A four-unit compressor plant was built and placed in operation soon after 2,000,000 bbls. of oil had been produced. This plant was capable of returning 10,000,000 cubic feet of gas per day to the formation at pressures up to 4,000 pounds. (A single unit was used for testing prior to building the plant, as no data of any kind were available for determining the input pressures, and volumes which could be handled. No attempt had previously been made to return gas to a producing zone above 3,000 pounds.)

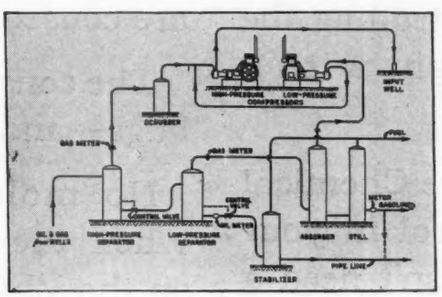


Fig. 5—High-pressure separator

The data obtained from the single-unit operation was used to determine the working pressures and cylinder sizes of the four-unit plant. After the cumulative production had reached 2,650,000 bbls., two additional compressors were added—making a total plant capacity of 15,000,000 cubic feet of gas per day.

An analysis of the curve shows that a sharp reduction in the rate of pressure decline took place shortly after the four-unit plant had been started, and the curve shows this relationship was further flattened after the two units had been added.

This plant has been in operation for about one year, during which time the production rate has been practically constant. Up to the time of producing 4,000,000 bbls., the operations under pressure maintenance indicate a saving of approximately 350 pounds in reservoir pressure. The average production per pound of pressure drop under normal decline was 3,650 bbls. This has been raised to an average of 42,500 bbls. under pressure maintenance. No particular operating difficulties have been encountered at these pressures.

It is expected that this retarded trend of pressure decline will continue over a long period of time, and that most of the oil to be recovered will be produced without pumping or gas-lifting. The estimated ultimate recovery of the pool is expected to be increased by at least 40 per cent, and the plant investment to accomplish the increase is estimated to be less than 5 per cent of the value of the increased production expected. The saving in gas for fuel is worth many times the cost of the plant.

Water immediately below the oil-producing zone at Tepetate is, no doubt, helpful in retaining the pressures along with the gas returned to the zone above the oil. By watching carefully the approach of bottom water and the gas-oil ratio of individual wells, it is planned to produce the oil between the gas and water levels until the formation has been practically depleted of oil.

A formation-pressure survey is made monthly, and the results studied carefully. Three input wells are sufficient to handle all the gas. Without pressure maintenance, much of the oil in the formation would have been forced up into the gas zone and lost for recovery. Under present operation, this will be prevented.

Condensate Recovery

In certain formations of the so-called distillate-well type, all of the hydrocarbon compounds exist in the gas phase. Hence, the distillate production—generally a water-white product—does not exist as such in the formation. Attempts to obtain liquid samples with bottom-hole samplers from such wells have resulted in the recovery of gas only.

The products of such fields or pools are best recovered under a complete pressure-maintenance program. If the stripped gas is not returned to the formation, the pressure will rapidly decline to the point where valuable hydrocarbon fractions in the gas phase will condense to liquids due to the change of physical conditions. This condensate will wet the sand grains (otherwise dry), and a large portion of it will be made irrecoverable for all time. A recent survey of the condensate or distillate-type producing wells in Texas indicates that 342 such wells were producing 143,313 bbls. of fluid with 9,508,420,000 cubic feet of gas, or with a gas-liquid ratio of 66,000 cubic feet per barrel.

Continued production of this nature with such extreme gas-liquid ratios will soon deplete the largest reserves. In sufficient quantities, such gas could be returned to the formation at high pressures for a few cents per barrel of the condensate produced, and the process could be continued without waste or rapid depletion of reserves. In this manner, ultimate recovery will be greatly increased. The Tide Water Oil Co. has recently put such a plant in operation at Cayuga, Tex.

Under such high gas-oil ratios, the fuel value of the gas produced is about 10 times as much as the fuel value of the product recovered. Inasmuch as most of the liquid recovered is used as fuel in some form, it can be readily seen that present condensate-recovery operations are carried on with extremely poor efficiencies.

Experimental work done in the field of this type of high-pressure production indicates that where the pressure is reduced to less than 1,200 pounds per square inch in the formation, as much as 25 per cent of the otherwise recoverable product will be lost by wetting the sand. The liquid products obtained from gas-phase reservoirs is due to retrograde condensation, and a high percentage of the volume can be produced without loss in the reservoir if pressure is maintained.

The re-injection of stripped gas to such formations will maintain the pressure so that practically

The gumbug patrol

Did you ever see a bluecoat patrolling the park at night with a flashlight?

You can't see the Chemical Cop on gum patrol in your gasoline—he doesn't need a flashlight to watch the Molls

The Molls are molecules—hydrocarbon molecules in the gasoline—oxygen molecules in the air

If they get together there are consequences

The consequences are gumbugs—and trouble

No molecular spooning when the Chemical Cop is on the job

He really works for you for nothing for he saves you more than he costs*

*If the job is too tough for the cop, call the Chemical Sergeant He can handle any job

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
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all of the usable constituents of the hydrocarbons may be recovered. As the process continues, dilution of the recoverable vapors with the dry gas returned will make the process slightly more costly. However, preliminary work indicates that the so-called distillate fields may be produced for indefinite periods, and economical recovery made, if pressures at or near those originally existing are maintained. It is anticipated that most so-called distillate pools will be operated under pressure maintenance in the future.

Normal temperatures in the zones producing condensate keep the hydrocarbons in the gas phase, unless the pressure is greatly reduced. After the above cycle has been carried out to economic depletion, over a period of years, a reservoir of dry gas under high pressure will remain. The gas, having given up its usable condensable content, is then availabe for the market as fuel.

Test work indicates that stage separation may be used to obtain the condensable fractions without the necessity of going to extremely low temperatures, and only a limited amount of refrigeration is considered necessary. Low temperatures are somewhat more efficient for vapor recovery, but the formation of hydrates attending their use will probably make the operation more costly than stage separation under normal temperatures. Figure 4 shows the relationship between temperature and pressure for hydrate formation.

With the first stage of separation being held at or near 1,200 pounds per square inch, only one stage of compression is necessary to return gas to the highest formation pressures from which it is now produced—making the compression costs low.

Maintenance of Lime Formations

Most of the pressure-maintenance operations carried out have been in connection with production from sand bodies. However, there is no reason to believe that such operations will not be successful in pools producing from limestone formations.

The essential requirements for a producing pool are the same, whether the formation is a pure sand body or porous limestone. In a producing zone, the formation must be porous, must contain oil, and must have energy in and associated with the oil. It may be said that "wherever oil is taken out, gas may be returned."

The nature of the pore space may differ widely between sand and limestones—grading from uniform conditions in sand to cavernous conditions in lime. A given volume of input gas will affect the pressure conditions in an equal volume of pore space, regardless of the size of the pore space—unless the spaces are so small that they resist gas flow, causing the Jamin effect to take place.

In some limestone formations it is possible that cavernous conditions might cause by-passing to a greater extent than would occur in sand bodies. This would make the selection of input wells somewhat more difficult.

Returning gas to lime-rock formations, where bottom and edge water are prevalent, will be beneficial in retarding the rate of water encroachment and increasing the ultimate recovery the same as in sand formations. The handling of gases containing hydrogen sulfide and water vapor may be expected to cause higher compressor-maintenance costs than those handling "sweet" gas and, consequently, pressure maintenance in lime zones would be more expensive.

Input Wells

One of the principal requirements in connection with high-pressure gas injection is to have the input well free of drilling mud before the gas is pumped into it. Experience has shown that a small amount of mud will form a seal through which it is practically impossible to pass gas at any differential pressure. A small amount of mud has held gas from entering the formation where the differential pressure over the formation pressure was 2,500 pounds per square inch. Then, upon flowing such a well through a small choke, gas was made to enter the formation with only 100 pounds in excess of the formation pressure.

In general, it may be said that: "the gas zone overlying oil will take gas with pressures of about 10 per cent over the existing formation pressure." A pressure equal to the weight of the gas column, plus the formation pressure, will generally be suitable for injecting gas into the formation. In designing a plant, the input pressure should be considered about the same as the formation pressure. This is not exact, but experience has shown it to be approximately correct. The weight of the gas column can be calculated by the following formula:

$$P_w = P_h e^{0.0000361\ LG} \text{ (at 60° F.)}$$
$$= P_h(1+0.0000361\ LG) \text{ (approximate formula).}$$

Where:

e = base of natural system of logarithms.
L = depth of well to producing zone.
G = specific gravity of the gas (air = 1.0).
P_w = pressure at the formation depth.
P_h = pressure at the top of the well.
0.0000361 = weight of a column of air 1 square inch in cross-section, 1 foot high, at 1 pound per square inch absolute pressure at 60° F.

It is advisable to fit compressors with clearance pockets to adjust for volumetric clearance after the final pressure conditions are known.

It is well to check the casing in a high-pressure input well for bursting strength, and to allow an ample factor for safety.

All gas-input wells in high-pressure pools should be equipped with a string of tubing in order that any well may be killed by circulation, if it becomes necessary at any time to work on it. Gas may be injected through either the tubing or the casing, whichever provides the simplest method of connecting—there being no particular choice.

A single well may be satisfactorily used for both oil production and gas injection—especially where the producing section is thick, and where there is a thick section between the oil-entrance ports at the bottom and the gas-discharge ports at the top. A suitable packer may be run on the tubing to seal the space between the tubing and the casing below the gas-input perforations, so that oil may be produced through the tubing and the gas injected through the casing. It is not believed that any vertical migration of gas will take place to the oil inlet, as the differential pressure between the top and bottom of the sand will be small. Successful operations under these conditions will eliminate the necessity of drilling an input well. In deep producing formations, these wells often cost as much as $90,000 each.

Where wells are drilled for gas injection, care must be exercised in obtaining a good cement job. It is considered good practice to set the casing through the gas zone, and then to perforate it at the section desired.

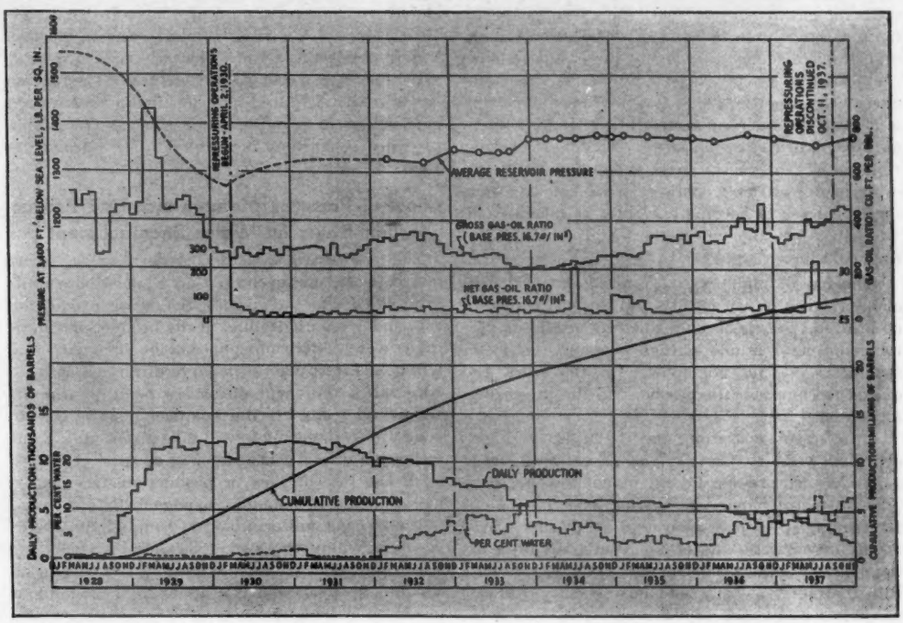


Fig. 6—Reservoir pressure and production data—Sugarland (after W. W. Scott)

Stage Separation and Pressure Maintenance

The cost of machinery installations for pressure-maintenance work is governed by the number of compression ratios through which the gas is compressed. To illustrate this, the following example is given:

Assume pressure required to return gas to be 4,000 pounds, gauge.

Assume intake to compressor at 500 pounds, gauge.

The compression ratio is $\frac{4{,}000+14.7}{500+14.7}$, or 7.80. Inasmuch as it is impractical to compress through 7.80 ratios in a single stage on account of the heat of compression, two-stage compression will be required, and the ratio per stage will be the square root of 7.80, or 2.79.

The theoretical horsepower per 1,000,000 cubic feet per day is approximately 49 per stage (See Figure 1). With an efficiency of 85 per cent, the total horsepower required will be $\frac{49\times 2}{0.85}$, or 115.3.

Assume the same discharge pressure of 4,000 pounds gauge, with 1,200 pounds intake pressure.

Then, the compression ratio is $\frac{4{,}000+14.7}{1{,}200+14.7}$, or 3.306.

In this instance, single-stage compression may be

used, and the theoretical horsepower per 1,000,000 cubic feet in 24 hours is 59.3. With an efficiency of 85 per cent, the actual horsepower will be 69.8.

From the above illustrations it can be seen that, by raising the compressor intake pressure from 500 to 1,200 pounds to a final pressure of 4,000 pounds, a saving of 45.5 hp. per 1,000,000 cubic feet is effected, which is approximately 40 per cent.

The restriction of oil flow from a high-pressure well, by means of an orifice or choke to control production rate and gas-oil ratio, converts energy in the gas under pressure from a useful to non-useful form.

The ideal method of production would be one in which only solution gas was utilized to raise the oil and this gas, when liberated, returned to the formation to maintain reservoir pressure. In deep wells the gas in solution is not always sufficient to lighten the column of fluid in the well so that it will flow. In such cases, part of the free gas above the oil must be produced to liberate sufficient energy to cause the well to flow. When such a well is choked with a flow bean, the gas energy liberated does work by expanding and cooling the entire fluid mass. The energy lost for doing useful work often makes difficult operating problems by causing lead lines to become choked or plugged with paraffin, especially where the oil produced has a high cold test.

The use of high-pressure separators with less choke restriction permits the energy in the gas to be utilized. This is accomplished by providing gas for compressor intake at high pressures off such separators, saving horsepower in the work required to compress the gas back to the producing formation.

Two stage separation may be used on high-pressure wells to provide gas at elevated pressures for compressor intake in connection with pressure-maintenance operations. The gas taken off the high-pressure separators will consist primarily of methane and ethane, with but little of the heavier hydrocarbons. Its gasoline content will, therefore, be low; and no difficulty will be encountered in handling it through compressors to the formation.

Oil from the high-pressure separator (Figure 5) is carried to a low-pressure separator, and from there through a stabilizer (if required) to control its final vapor pressure. Gas from the low-pressure separator is carried through a conventional absorber plant. This gas will be rich in gasoline content, as it is largely solution gas liberated by the pressure drop between the two separators. After it has passed through the absorber and has given up its condensable fractions, the gas is compressed up to the suction pressure of the high-pressure compressors for return to the producing formation. The waste vapors from the crude stabilizer are compressed and circulated through the absorber, where condensable fractions are saved in the gasoline produced.

The proper pressure for operation of the high-pressure separator is determined only by field tests on the wells concerned. All wells will show an optimum range of separation pressure, where the liquid content of the fluid will be greatest and with minimum gas-oil ratio. The pressure for best separation varies with the formation, gas-oil ratio, and hydrocarbon composition. Tests indicate that the greater the gas-oil ratio in the formation, the higher will be the separation pressure for maximum liquid recovery and minimum gas-oil ratio. The separating pressures vary from 800 pounds, for gas-oil ratios under 1,000 cubic feet per barrel, to 1,200 pounds for gas-oil ratios in the range of 50,000 to 60,000 cubic feet per barrel produced by wells from formation pressures in excess of 3,000 pounds.

Although the gas taken off high-pressure separators is relatively dry, its recoverable gasoline content must be considered, in working out the balance between the loss of revenue from such gasoline at current market prices, against the cost of lowering the working pressure of the separators to normal plant pressure and then compressing the residue up through the required stages to well input pressure.

In most cases the economic operating conditions will be at the higher pressures. The conditions make it feasible to return gas to the formation from wells with extremely high gas-oil ratios, and maintain continued production without waste at reasonable lifting costs over long periods. Operations of this type will save gas in the formation for future consumption. The machinery cost for single-stage compression is relatively low; the operating expense will also be low.

Oil from the low-pressure separators should be stabilized if its vapor pressure is such that excessive losses are incurred from standing in storage. Vapors from the stabilization of crude are processed for recoverable gasoline content. The residue gas over that required for plant fuel is compressed sufficiently to be united with the gas from high-pressure separators for return to the producing zone.

Effect of Pressure Maintenance and Production Rates on Water Encroachment

The controllable factors concerning edge- and bottom-water encroachment, in a pool where wells are drilled and the spacing fixed, are production rate and pressure decline. If the production rate is high, water encroachment will be irregular, and will be greatest where the large difference in pressure exists. This will, obviously, be at or near the producing wells. If the encroachment is due to edge water, fingering-in will take place; and, if due to bottom water, coning-up will occur.

If the rate of flow or production in a pool is maintained slow enough, the edge or bottom water will approach uniformly—and a maximum recovery of oil will be obtained. Laboratory experiments with controlled regular production have shown recoveries up to 400 per cent more than the amount produced by irregular or more speedy means. Rates of production which will permit such recoveries may not be, for economical reasons, the best rates for practical operation of a pool.

The returning of gas to the formation retards the pressure decline in the pool, keeps the differential pressure required for production to a minimum, and causes the water level to encroach more uniformly. Encroachment of water in this manner is very beneficial, and will cause more oil to be produced than if no water were present. This is due to the difference in adhesion-tension of water and oil, and to the fact that water will selectively wet silica sand and displace oil.

The only practical control of water encroachment is by production rate and the retention of formation pressure. The retention of formation pressure is dependent on the production rate and the rate of gas injection. Well-head pressures are of but little value in analyzing subsurface conditions, as the weight of the fluid column—unless it is all gas—is never known. Only bottom-hole pressures should be used for such studies.

In a large pool a sufficient number of wells to maintain uniform pressure over the entire area is required. Different wells may have to be used periodically to keep formation pressures uniformly balanced throughout the formation.

In pressure-maintenance operations, where a highly permeable gas zone overlies the oil zone, only a few injection wells are required, as the gas injected into the gas zone migrates readily and the pressure is practically uniform. As much as 15,000,000 cubic feet of gas per day has been injected into a single well, and the pressure over 1,200 producing acres maintained practically uniform.

Inasmuch as the rate of production is an important factor in pressure-maintenance operation, it should be as regular as possible between wells, and at the lowest practical rate. A pool operated under a pressure-maintenance system is capable of producing at high rate of production, with less danger to ultimate recovery than a similar pool not so operated. High production rates, however, are not recommended.

Well-head temperatures are always less than formation temperatures. This is due to the vertical subsurface thermal gradient and the work done by gas in expanding to raise the fluid to the surface. If no water enters the well, the relationship of the top and bottom temperatures will remain practically constant for any flow rate. As water encroaches and is produced, the bottom-hole temperatures will change but little—but the well-head temperature will increase. The greater the percentage of water, the greater will be the increase.

Most wells will show sudden increases in production rates just before making water, and such indications should always be a warning to choke back the wells. It is easier to keep water from entering a well than to free it of water after it has entered.

South Burbank Pool

The South Burbank pool in Osage County, Oklahome is operated under a pressure-maintenance system. Fifteen operators in this pool unitized 2,720 acres, and started returning gas to the formation in 1935.

Gas in the amount of 15,000,000 cubic feet per day is being pumped back to the producing zone at pressures up to 900 pounds. To January 1, 1938, 9,900,000,000 cubic feet had been saved and returned. In addition to the unitized area, the operators of several adjacent outside leases are working on the same program, and are returning 3,500,000 cubic feet per day.

The original formation pressure in the South Burbank pool was 1,100 pounds. The pressure in November, 1937, was 610 pounds. The gross gas-oil ratio of oil produced is 2,700 cubic feet per barrel. Gas returned averages 1,400 cubic feet per barrel, leaving a net ratio of 1,300 for all barrels of oil produced. Of this amount, 400 cubic feet per barrel is gas in solution. Under present operations, then, 900 cubic feet of free gas is being taken out of the formation for each barrel produced.

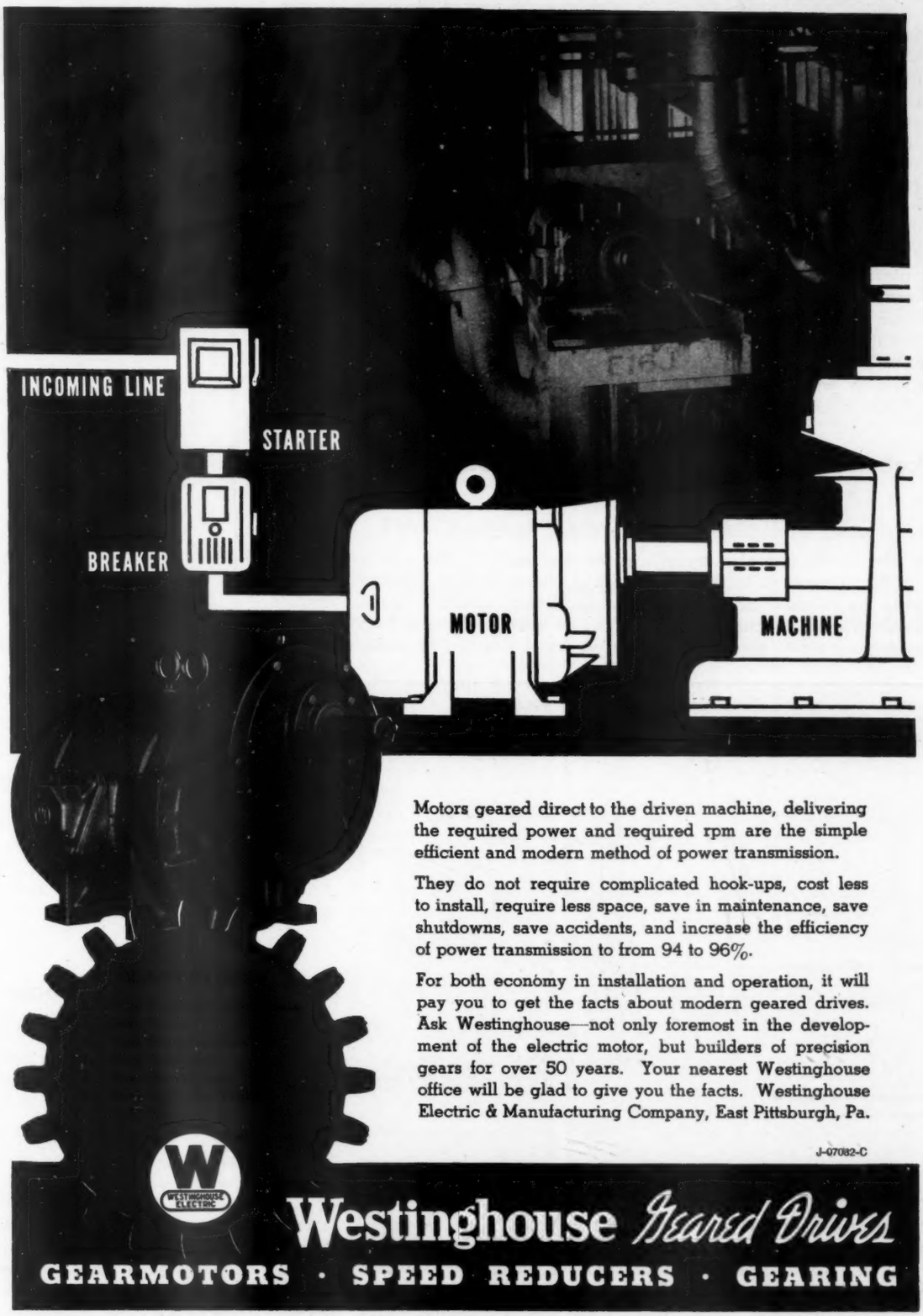
From the discovery of the pool to November, 1937, oil was produced with a drop in reservoir pressure of 30 pounds per 1,000,000 bbls. produced. During the past year the pressure drop per 1,000,000 bbls. has been reduced 33⅓ per cent to 20 pounds. This has increased the production from 33,000 bbls. to 50,000 bbls. per pound of pressure drop.

The recovery from the South Burbank pool averaged 4,250 bbls. per acre to January, 1938. This pool is quite similar to the old Burbank pool, whose ultimate recovery is estimated to be 10,000 bbls. per acre, most of which will be produced by pumping. The wells in South Burbank, with the exception of some 25 edge locations, are all flowing and producing their oil with lowest possible lifting costs.

The South Burbank spacing is on a staggered 10-acre pattern, and averages 16 acres per well. The old Burbank pool is drilled on a 10-acre rectangular pattern. The South Burbank pool is, therefore, drilled with approximately 40 per cent less wells than the old Burbank pool, with a corresponding saving in initial investment.

Greatly increased ultimate recovery from a smaller investment, with a lower lifting cost, will be the direct result of early establishment of pressure maintenance. The development cost per ultimate barrel produced is estimated to be about 30 per cent of that necessitated by the development of the old Burbank pool. The royalty of this project is owned by the Osage Tribe.

(Continued on Page 62)



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Operating Kinks in Natural Gasoline

Method for Repairing Gas Line

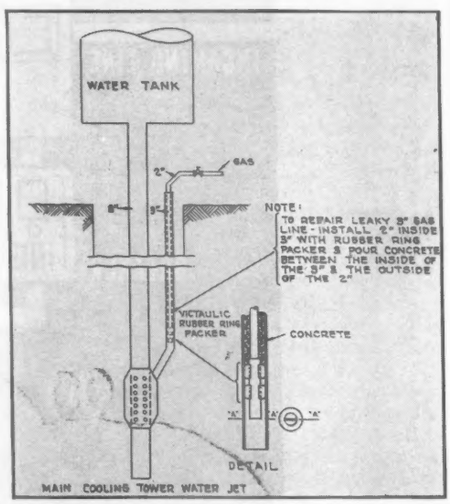
FOURTH PRIZE, CLASS D, $2.00

REX MORGAN, chief operator,
H. N. MILLER, repairman helper,
Phillips Petroleum Co., Oklahoma City, Okla.

A simple and effective method of repairing air or gas lines used for flowing water wells makes it possible to avoid a complete shutdown of water circulation or the necessity for using expensive temporary substitute equipment, while repairs are made. This method was worked out at the Phillips Oklahoma City plant where water was lifted by eight 8-inch lift lines, each of which was serviced by a 3-inch gas flow line. After several years of service under water, flow lines were perforated at a number of points as the result of corrosion and as a result a considerable amount of gas bubbled up in the pit or well and the efficiency of the jet was much reduced.

Continuous operation without installing auxiliary pumps during repairs was achieved by tubing the leaking 3-inch lines, one at a time, with 2-inch pipe. A home-made and inexpensive bottom-hole packer was devised, utilizing two 2-inch collars, a short 2-inch nipple, and an ordinary 2-inch victaulic coupling rubber (shown in sketch). This packer was attached to the bottom of a string of 2-inch tubing about 65 feet long. This bottom packed string of tubing was lowered inside the 3-inch to a depth where the packer was just above the point where the 3-inch angled over to make a connection at the bottom of the 8-inch water flow line. The space between the 3-inch and the 2-inch was filled with quick-setting cement, the cement being retained by the packer at the bottom.

After allowing the cement to set for 48 hours, the 2-inch tubing was hooked up to the gas supply and satisfactory results were


WATER TANK
GAS
2"
8"
3"
NOTE:
TO REPAIR LEAKY 3" GAS LINE - INSTALL 2" INSIDE 3" WITH RUBBER RING PACKER & POUR CONCRETE BETWEEN THE INSIDE OF THE 3" & THE OUTSIDE OF THE 2"
VICTAULIC RUBBER RING PACKER
CONCRETE
DETAIL
MAIN COOLING TOWER WATER JET

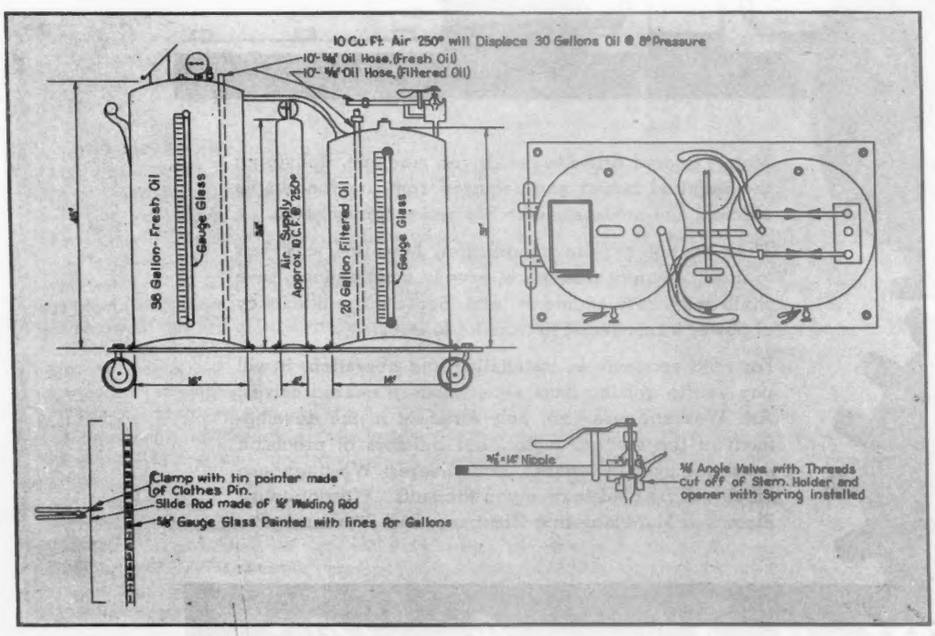
obtained when service was resumed with gas flowing through a 2-inch instead of a 3-inch line. However, because of the reduction in the size of the line, it was necessary to increase the pressure 3 pounds to operate at the former water flowing rate. The cement protects against corrosion and the lines are expected to last several years.

Portable Oiler Accurately Measures Oil Input

SPECIAL RECOGNITION

J. R. GREEN, Skelly Oil Co., Carter Nine, Okla.

This portable oiler serves a duel purpose; it saves time taken by the oiler in walking back and forth to the oil reservoir for small amounts of oil required for lubricators and it measures accurately the oil used. On one end of the small truck, built to be pushed around the plant, is a 38-gallon fresh oil tank; on the other end is a 20-gallon tank for filtered oil which is used only in the crankcases. Between the two tanks are two cylinders provided


10 Cu. Ft. Air 250# will Displace 30 Gallons Oil @ 8# Pressure
10'-⅝" Oil Hose, (Fresh Oil)
10'-⅝" Oil Hose, (Filtered Oil)
38 Gallon- Fresh Oil
Gauge Glass
Air Supply Approx. 10 C.F. @ 250#
20 Gallon Filtered Oil
Gauge Glass
Clamp with tin pointer made of Clothes Pin.
Slide Rod made of ¼" Welding Rod
⅛" Gauge Glass Painted with lines for Gallons
¾"×14" Nipple
¾ Angle Valve with Threads cut off of Stem. Holder and opener with Spring installed

for holding air at 250-pounds pressure, for use when the pressure is low in the oil storage tanks. Each of the two storage tanks has 10 feet of five-eighths-inch oil hose with a quick opening valve at the end, also a gauge glass with markings which may be read to find the number of quarts taken from the tank.

Recording of oil input and output is facilitated by the use of a pointer made from a clothespin. Before filling a lubricator the pointer is set at the old oil level, after taking a reading of the amount of oil used, this amount is recorded on an oil card in a convenient holder on the new oil tank, which has a separate card for each engine. Lubricators can be filled in half the time ordinarily taken when a gallon measure is used; furthermore, there is an advantage in having accurate oil consumption records.

Repairing Leaky Tubes

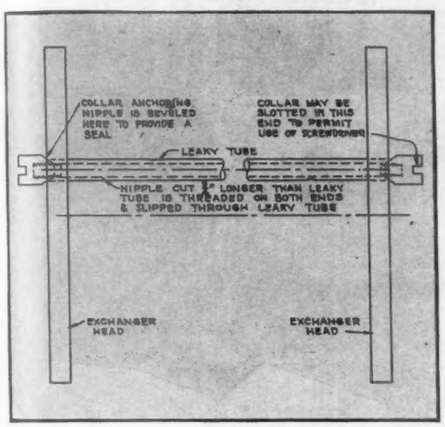
HONORABLE MENTION

D. W. HUNSAKER, chief operator,
Phillips Petroleum Co., Crane, Tex.

It is common practice when repairing leaky tubes, in heat exchangers or condensers, having a head at each end, to cut out the tubes as leaks develop and plug the holes in the heads. In attempting to ream out the holes in the heads for installing new tubes, it is usually discovered that the plugged holes have damaged the heads to such an extent that it is necessary to install new heads. The purpose of this kink is to provide a quick and economical method of prolonging the life of the heat exchanger which will make it possible to preserve the heads at the same time. The procedure is as follows: As soon as a leak develops in

Presented Before Meeting

a tube, a nipple is cut and threaded which is small enough to slip through the damaged tube. Bevelled collars, with slots cut at the end, anchor and seal the nipple. The


COLLAR ANCHORING NIPPLE IS BEVELED HERE TO PROVIDE A SEAL
COLLAR MAY BE SLOTTED IN THIS END TO PERMIT USE OF SCREWDRIVER
LEAKY TUBE
NIPPLE CUT ½" LONGER THAN LEAKY TUBE IS THREADED ON BOTH ENDS & SLIPPED THROUGH LEAKY TUBE
EXCHANGER HEAD
EXCHANGER HEAD

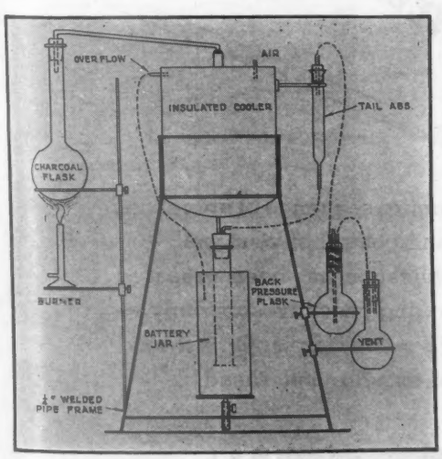
exchanger is now ready to be put back into service. Little labor and material is required for this method.

Charcoal Distilling Apparatus

HONORABLE MENTION

GLENN WALLACE, assistant chief operator, Phillips Petroleum Co., Oklahoma City, Okla.

In order to provide equipment for charcoal distillation of a more compact nature than the conventional equipment ordinarily



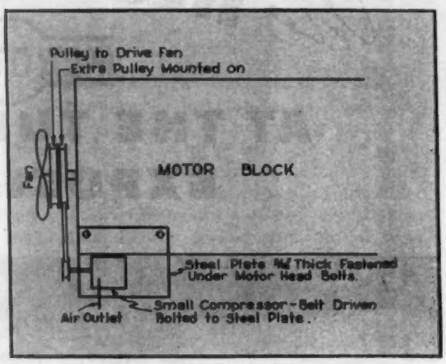
used, improvements have been devised which the accompanying drawing shows provide advantages of portability. All auxiliary attachments such as rings, bottle holders, burner supports, etc., can be attached to the supports of the distillation condenser, thus doing away with the use of ring stands. All material used came from the scrap heap; the only expense was that of welding; it is estimated that the total cost is $12 less than that for the conventional unit.

Compressor for Blowing Drips

THIRD PRIZE, CLASS D, $3.00

E. L. PARSLEY, field supervisor, Skelly Oil Co., Lyman, Okla.

By mounting a small compressor on the drip truck for the purpose of furnishing compressed air for blowing the drips of vacuum lines, an important saving is possible because the company can salvage several miles of small residue lines formerly used for blowing the drips. This practice may be considered a kink in itself. However, the operating idea, in connection with this practice, is an auxiliary feature applicable in severe weather when the regular drip trucks cannot reach the drips. For service on such occasions, a small air compressor has been mounted on a steel plate at one side of the motor of the field supervisor's


Pulley to Drive Fan
Extra Pulley Mounted on
Fan
MOTOR BLOCK
Steel Plate ¼" Thick Fastened Under Motor Head Bolts.
Air Outlet
Small Compressor - Belt Driven Bolted to Steel Plate.

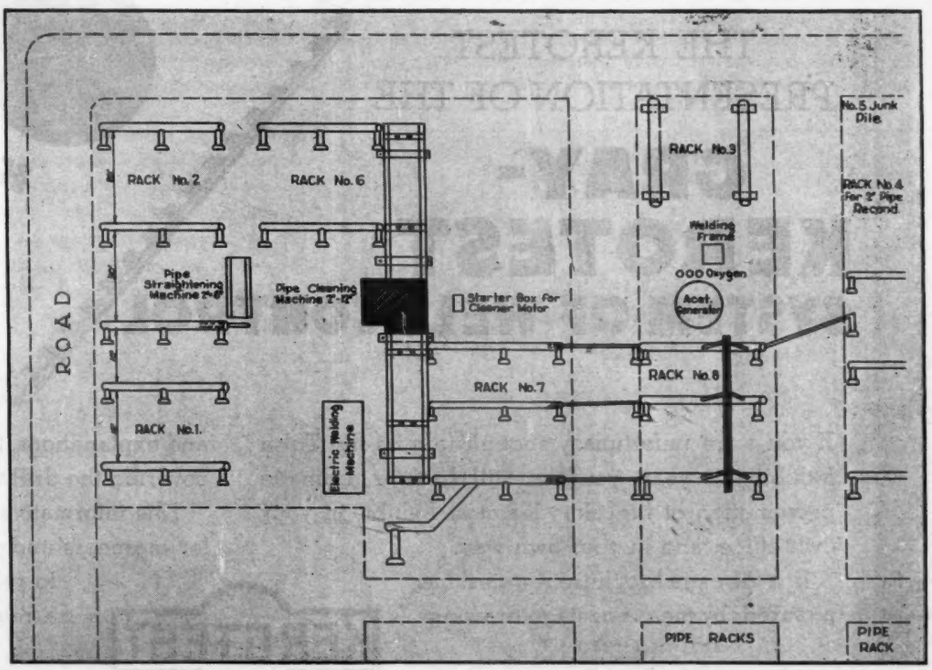
pickup truck. This air compressor is belt-connected to a pulley placed on the fan shaft for this purpose. The compressor used for blowing drips in this way is a small one of the size of those used for refrigerator units. With this equipment it is possible to blow a 10-inch by 16-foot drip in three minutes. Total cost of the installation was $10.00.

Pipe Reconditioning Rack Reduces Handling

SECOND PRIZE, CLASS D, $10.00

WALTER SUTTON, welder, Skelly Oil Co., Carter Nine, Okla.

For eliminating unnecessary lifting and hauling in the handling of pipe during reconditioning operations this rack has been devised, which has effected substantial savings in manual labor on this kind of work. When pipe is brought from the field crooked pipe in sizes between 2-inch and 8-inch goes to Rack No. 1, straight pipe and all pipe between 8-inch and



12-inch goes to Rack No. 2, pipe larger than 12-inch goes to Rack No. 3, clean 2-inch pipe goes to Rack No. 4, and junk pipe goes to Rack No. 5. This system of racks functions as follows: Pipe from Rack No. 1 is straightened and put on Rack No. 6; pipe from Racks Nos. 2 and 6 is cleaned and put on Rack No. 7; from Rack No. 7 pipe can be hauled away if it is in servicable condition. Pipe requiring reconditioning is rolled to Rack No. 8 where it may be patched, plain ended and welded together. On leaving Rack 8 pipe is sorted for placing on other racks to be oiled and tallied. Pipe on Rack No. 3 is reconditioned or made into drips.

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Large Brine Disposal System Placed in Operation in Hendricks Field

By MITCHELL TUCKER

The world's largest salt water disposal system has recently been put into operation in the Hendricks pool of Winkler County, western Texas. This field has long been famous for its high percentages of water to oil production, and for its unique lifting problems. As a rather recent development in the field, wells having fluid volumes up to 20,000 bbls. per day are being successfully handled by gas-lift, while casing pumps handle wells economically which are making as much as 99 per cent water. Because of these phenomenal lifting achievements, the abandonment rate at Hendricks has been sharply checked, and many wells are being revived and placed back on production after having been temporarily abandoned for several years.

Furthermore, West Texas and New Mexico operators are watching the handling of large water volumes at Hendricks much closer than they did a few years ago, because all indications point to the fact that similar volumes of fluid will have to be handled in other limestone fields likewise situated along the west platform of the Permian Basin during their later life. Such fields as Cooper and Monument in New Mexico, and the Henderson field of West Texas, are examples exhibiting the influence of an enormous and highly effective water drive from the west. They are also attracted by the high recoveries already obtained at Hendricks, which now average about 18,000 bbls. per acre for the pool as a hole, and twice that or more for certain leases favorably situated.

At the present time the actual daily salt water production from 340 wells is approximately 1,000,000 bbls. Those companies holding acreage on the outskirts of the productive limits continue to handle their water production in evaporating pits, as new ones can be cheaply constructed on the surface areas available. However, those operators who have large water productions on properties in the heart of the field finally reached the point where all available space has been converted into pits, the ground has become fully saturated, and the disposal rate was not sufficiently rapid to keep pace with increasing water productions.

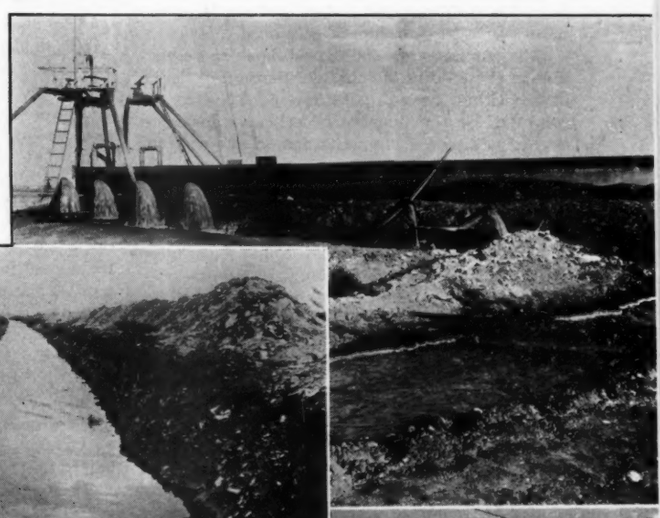
To meet this condition, Lion Oil Refining Co. (as operator for a cooperative enterprise) dug and put into operation about two months ago a very large drainage ditch, 20 to 25 feet in width, running down through the center of the entire field. The ditch's rated capacity is 1,000,000 bbls. per day. The total cost of constructing this system was about $15,000. The Humble, Gulf, Skelly and Sinclair Prairie companies shared in this expense in the proportion that their gauged water production bore to the total water production of all cooperating companies. Aggregate gauge of water from all five company properties when the ditch was put into operation was 560,000 bbls. per day. Each company then reimbursed Lion in the proportion that its production bore to the 560,000 bbls. total water production. Also, each individual company must construct the lateral ditches from its properties leading into the main ditch. It has been pointed out that this ditch is now the only running body of water in Winkler County.

The course of the ditch was carefully laid out so that full advantage of gravity would be taken, and the water would flow downstream naturally. A reclamation plant is to be built on the ditch just as it leaves the field in order to recover any scum or oil that might not have been separated out at the various tank batteries and treating plants.

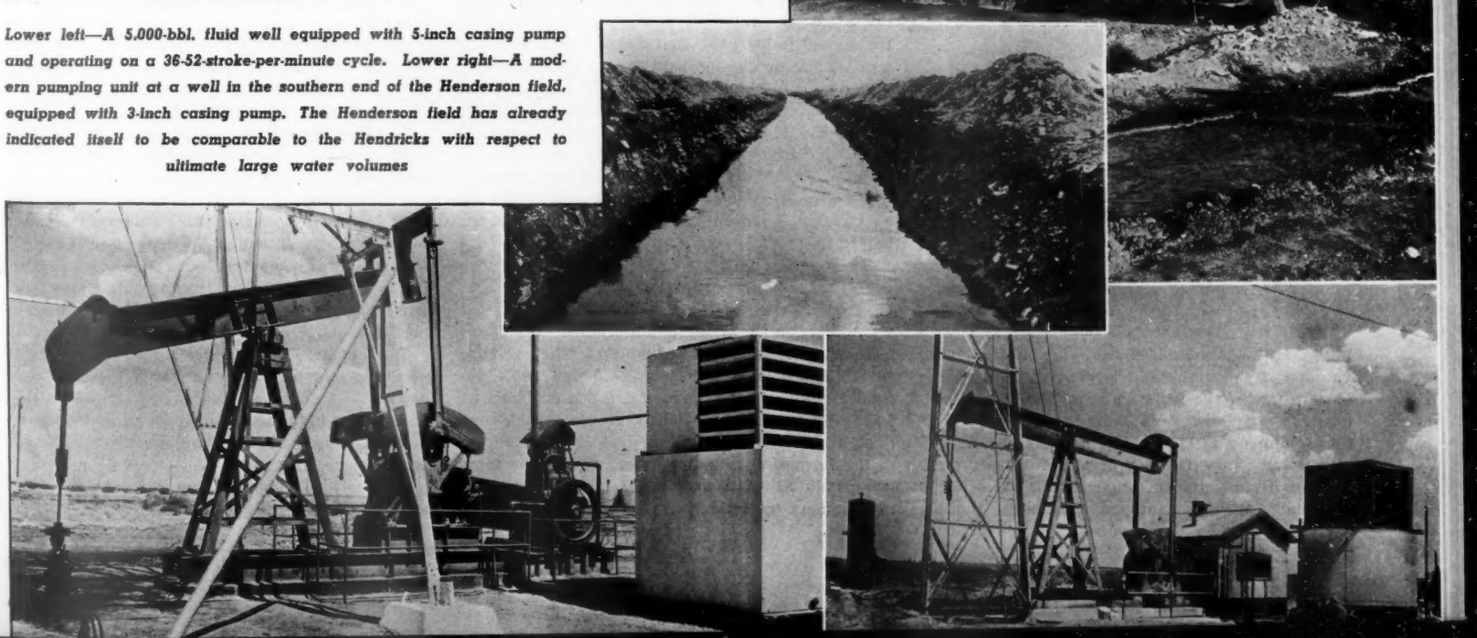
The ditch extends about 5 miles south of the field and disposes of its water into a series of great natural caverns. Several sections of land containing and surrounding these caverns have been purchased by the salt water disposal unit. The ditch was dug sufficiently deep at all places to encounter a solid bed, and all wells are banked so the maintenance expense in the future should be negligible.

Revival of Abandoned Wells

Due to the inefficient manner of well completion, and excessive withdrawals of both oil and water during the early life of this field, any sort of plug-back or remedial work to shut off water has been generally unsuccessful. For that reason, over 200 large water producing wells were abandoned in this field up to 1933, because at that time it was mechanically impossible (and certainly economically unprofitable) to lift such volumes to obtain any oil production. The abandonment rate in the field has been almost checked, however, after operators have conclusively learned that enormous fluid volumes can be profitably handled



Water being drawn off through six 8-inch bleeder pipes at a buried battery of cement stock tanks is shown at the right. Inset—Main drainage ditch leading out from the Hendricks pool. Rated disposal capacity of this ditch is 1,000,000 bbls. per day, but today it is handling only 560,000 bbls.



Lower left—A 5,000-bbl. fluid well equipped with 5-inch casing pump and operating on a 36-52-stroke-per-minute cycle. Lower right—A modern pumping unit at a well in the southern end of the Henderson field, equipped with 3-inch casing pump. The Henderson field has already indicated itself to be comparable to the Hendricks with respect to ultimate large water volumes

by gas-lift or casing pumps, and after the Railroad Commission of Texas granted permission to use these methods of lifting.

Shell Petroleum Co. has assembled a very unique well testing unit which they are now using in the field on wells which were temporarily abandoned several years ago because of excessive water volumes. This assembly consists of a pulling machine, a heavy-duty pumping rig mounted on skids, and a set of casing pumps in 3-, 4- and 5-inch sizes. The entire unit is moved on to an abandoned well, it is pulled and bailed out to bottom, and the pumping unit then set over the well for a series of pumping tests with the different size casing pumps to determine which, if any, size will exhaust the water and bring the well back onto oil production. To date about 60 per cent of the wells tested have been successfully revived. Water production in the other wells could not be exhausted, due to their structural position, etc. As a general rule, any well that will make 25 bbls. of oil, regardless of its water volume up to the maximum capacity of the casing pump, can be equipped to pump with a new heavy-duty pumping unit, rods, etc., and pay out in a reasonable length of time and show a profit.

Gas-Lift

Where gas is available from wells at sufficiently high pressure to kick off these high fluid level wells, gas-lifting is undoubtedly the most economical method of producing at Hendricks, and will lift the greatest amount of fluid per day. There are now six gas wells on the eastern side of the structure which are supplying gas for flow valve operation. From five to eight flow valves are required in each installation. The "casing flow" settings are generally used, where the flow valves are placed outside the tubing, gas is introduced down the tubing and flow is up through the casing. These wells all have very high fluid levels, and a high degree of areation in the fluid column. The flow valves are installed to apply additional expanding gas and aeration at the right points and in the right quantities. The differential pressure set up across the flow valve between the fluid level and the flow column, and the gas pressure applied extraneously, results in the profitable flow of very large quantities of water. Kick-off pressures run from 250 to 400 pounds; the gas wells have enough natural pressure to supply this need.

The gas wells are considered much more valuable to the owners in this field than oil wells, because of their need in gas-lift work. For that reason, and for the purpose of efficient operation, very careful check is maintained on all gas going into the wells, and fluid production is gauged periodically. As a general rule, if any well is found to be producing with a gas to fluid ratio above 45 to 50 cubic feet per barrel, it is made the object of a special study to see if ratios cannot be reduced by respacing of the flow valves, varying pressures, or other changes. Lifting costs per barrel of fluid, figuring gas at a value of $0.02 per 1,000 cubic feet, runs from $0.005 to $0.0016 on the most efficient flowing wells. Lifting costs per barrel of oil in the same installations run from $0.07 to $0.01.

Casing Pumps

At the present time there are 165 casing pumps operating in the Hendricks pool. They have been tried and proven here, and have done much to prolong the economic life of the field. The scarcity of gas for gas-lift purposes places much of the load of lifting the 1,000,000 bbls. of fluid per day on casing pump installations. These pumps also take advantage of the high fluid levels and high degree of aeration in the fluid column. The largest volume of water on record to be handled by one of these pumps was 11,500 bbls. per day, which was at a volumetric efficiency of about 600 per cent. Average fluid volumes range from 1,500 to 5,000 bbls. daily at wells equipped with casing pumps.

PRESSURE MAINTENANCE

(Continued from Page 56)

Naval Reserve Pool

The Naval Reserve pool is south of the South Burbank pool in Osage County, Oklahoma. There are 245 wells in this pool, which covers 26 quarter-sections. The field was about 90 per cent developed before gas injection was started, having declined in formation pressure about 60 per cent from 975 pounds.

Gas was first injected into the producing zone in December, 1937, and at the present time is being returned at the rate of approximately 5,000,000 cubic feet per day. Twenty-one of the total number of wells are used for pumping gas into the producing sand. The input pressures vary from 375 pounds to 660 pounds, being higher in the newer part of the field.

Practically all wells in the field are pumping on account of the delay in returning gas. The return of gas, however, is retarding the pressure decline, and will greatly increase the ultimate recovery. The field is producing from a flanking sand body, and there is no hydrostatic pressure on the sand to assist in recovery. All of the energy is in the gas in solution and on the high part of the flanked sand.

The gas is compressed to required pressure by the operator of a casinghead plant in the field. It is distributed through a field system back to the leases in proportion to their production. The compression costs are allocated back to the producers in proportion to the volumes returned to the respective leases.

The project is working successfully, and the eight operating companies who cooperated in working out the arrangements will enjoy greater return on their investments. The properties are each operated by their respective owners on a cooperative basis. The royalty is owned by the Osage Tribe.

Sugarland Field, Texas

The Sugarland (Texas) pool overlies a salt dome, and the producing sand is from 3,400 feet to 3,700 feet deep. The pool originally had a small gas-cap above the center of the dome.

Original formation pressures were assumed to be about 1,500 pounds. They were not measured until some time after the pool had been developed. First production was obtained in March, 1928. The pool was then rapidly developed, and a peak production of 12,600 bbls. per day was reached in July, 1929.

The field was produced by normal methods until April 2, 1930, when the pressure-maintenance operations were started. Up to this time approximately 5,400,000 bbls. had been produced. Pressure in the producing sand at this time was estimated to have been approximately 1,275 pounds, and the production rate was held close to 12,000 bbls. per day. The gas produced with the oil was only 300 cubic feet per barrel, all of which was in solution. Most of the gas produced was returned to the formation—making the net gas-oil ratio very low, the average being about 20 cubic feet per barrel.

Production under pressure maintenance was continued, and the first measured pressures in March, 1932, indicated a rise to 1,330 pounds. The formation pressure gradually increased to January, 1934, when it reached 1,370 pounds. The pressure remained practically constant to January, 1938. The total volume of gas returned up to this time was 5,392,899,000 cubic feet. This represent 87 per cent of all the gas produced. This project has returned to the formation a higher percentage of the total gas produced than any other known pressure-maintenance operation.

An opinion expressed in one of the oil-trade journals in 1930 stated that the return and conservation of gas in this pool would permit 2,000,000 bbls. more oil to be produced by flowing. Since this time, more than 19,000,000 bbls. have been produced without pumping, and several million barrels more are assured.

The increase in ultimate recovery in a pool like Sugarland, due to pressure maintenance, is difficult to predict. Its principal value in a pool where edge water is present is to maintain the pressure so as to prevent water from encroaching on individual wells, rather than to prevent a gradual and uniform encroachment of water throughout the pool as a whole. It is the author's opinion that an average increase in ultimate recovery in all pools of at least 40 per cent over that otherwise obtainable will be made under pressure-maintenance operations.

Figure 6 shows the pressure and production data of the Sugarland field.

By holding pressure in the gas-cap at Sugarland, oil is prevented from moving up under water pressure, where it would be lost to recovery.

Cook Ranch Pool

See The Oil and Gas Journal, January 27, 1938.

Repressuring—Then Maintaining Pressure

Repressuring of depleted or partly depleted pools has recovered many millions of barrels of oil that would otherwise have been lost. A large-scale development and experiment in North Texas where a lease, ready for abandonment, was used for repressuring and pressure maintenance is very interesting. Sufficient gas was pumped into the formation to build up the pressure to its original value, and maintained. Since starting this work, 50 per cent of the total production from discovery to the starting of the pressure maintenance has been realized.

From the above it appears that many old properties could possibly be repressured—building up depleted pressures, and maintaining them for increased recovery.

Where gas is not economically available, air may be used advantageously. Great care should at all times be taken to assure against the extreme hazards of explosive mixtures.

Small allowables from many new wells should increase repressuring and pressure-maintenance operations in many old pools susceptible of increased recoveries, and should permit low-cost allowables to be made.

Summary

Pressure maintenance offers the following advantages:

1. Saves gas for fuel after oil production is finished, which is otherwise wasted.
2. Provides energy to produce oil, and eliminates pumping equipment.
3. Prevents bottom- and edge-water encroachment, with its resultant damage to recovery and equipment.
4. Increases life of gasoline-plant operations.
5. Increases greatly the ultimate recovery, with lower investment cost per barrel produced.
6. Allows production with high gas-oil ratios that would otherwise be detrimental. Under pressure maintenance *net*, and not *gross*, gas-oil ratios need be considered.
7. Increases return to state in taxes, and to royalty owner and operator, from increased production.
8. Provides a method of recovering condensate from "so-called" distillate wells without waste of gas.
9. Assists in maintaining reserves at lowest possible cost.

Current Practices in Selection of Oil-Field Equipment

By HARRY H. POWER
University of Texas

A.P.I.—Presented at Mid-Year Meeting, Wichita, Kansas, May 24, 1938

The typical sales forces of yesterday are not so remote in the history of oil production that some remnants of past practices have not survived today. Consequently, a comparison of the old and the new may introduce matters entirely familiar to those relatively young in the producing industry.

Those formerly recruited for sales work may be credited with the laying of substantial foundations for present-day practices. However, if the designer of the past arrived at incorrect conclusions, these conclusions may have been formed by reason of unreliable data received from the field. On occasions, investigation of the field angle may have been neglected entirely, with the hope that everything would turn out all right, including the customer's good will and forbearance. With the passing of time, improvements in oil-field equipment have mounted steadily by reason of the combined contributions of engineers, operators, and manufacturers. In addition, a fund of information available only after years of attention to practical details in field and plant has contributed to progress.

Fig. 1—Torsion extensometer mounted on drill pipe

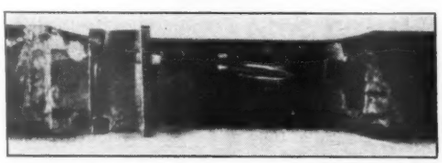


Fig. 2—Tension-compression extensometer

A most significant event in the development of oil-field equipment occurred approximately 18 years ago. At that time the Tulsa purchasing agents interested the manufacturers, and soon thereafter the American Petroleum Institute, in the standardization of rig irons. The interchangeability of mating parts by the manufacturers introduced the question of tolerances. Few employes knew exactly what tolerances were satisfactory, especially if the equipment in question was mated with parts made by someone else. Subsequent work on numerous problems concerning standardization has materially reduced experimentation on the part of the manufacturer, with consequent reduction of expense to the producer.

The practical education of the sales engineer today has been based, generally, upon intensive training in the fundamental facts concerning the products manufactured. Some of the equipment companies route the prospective sales engineer through various units of the plant, thereby affording practical experience involving design, metallurgy of steel, fabrication, finishing, and marketing. The prospective sales engineer may have had previous field experience in production. If not, such experience may have been required before permission was granted him to "call on the trade."

A third party has entered the picture in recent years, serving not only as technical advisor to the purchasing departments, but often making the initial investigation of the manufacturer's product. These assistants are not painted as technical robots without human virtues, but they sometimes had an uncanny way of asking questions concerning the merits of the equipment their companies investigated for possible purchase. Such situations probably launched the equipment salesman upon a new adventure of collecting complete data on his wares, available for ready reference. This procedure marked a new era in sales approach and methods.

In selecting equipment, the operator is primarily concerned with satisfactory operation at the lowest cost. He may choose improved roller bearings in lieu of the usual babbitt-type, provided the over-all cost is comparatively less. Satisfactory performance is not only judged by the opinions of operators, but should be backed up by adequate records showing initial investment, cost of repairs, and accurately-determined provisions for depreciation, obsolescence, and amortization. It frequently happens that loads and imposed stresses on producing equipment are not definitely known. Hence, accurate records showing details of repairs—and logically grouped for comparison—are often more important in determining the suitability of equipment than the original theoretical considerations of the designing engineer. In the development of new equipment, it may be necessary to keep special trial records in detail, until the development period is terminated and the product demonstrated to be of sufficient merit to warrant routine purchase in company operations. It may also be necessary to conduct special tests under proper supervision, preliminary to adopting the equipment generally. Such tests may be conducted at the manufacturing plant, in the field, or both. The production engineer and the plant designing engineer may work cooperatively, each profiting by the other's knowledge and experience in the design and operation of the equipment under test.

Sucker-Rods

A few years ago strings composed of straight ⅝-inch and ¾-inch sucker-rods were used almost

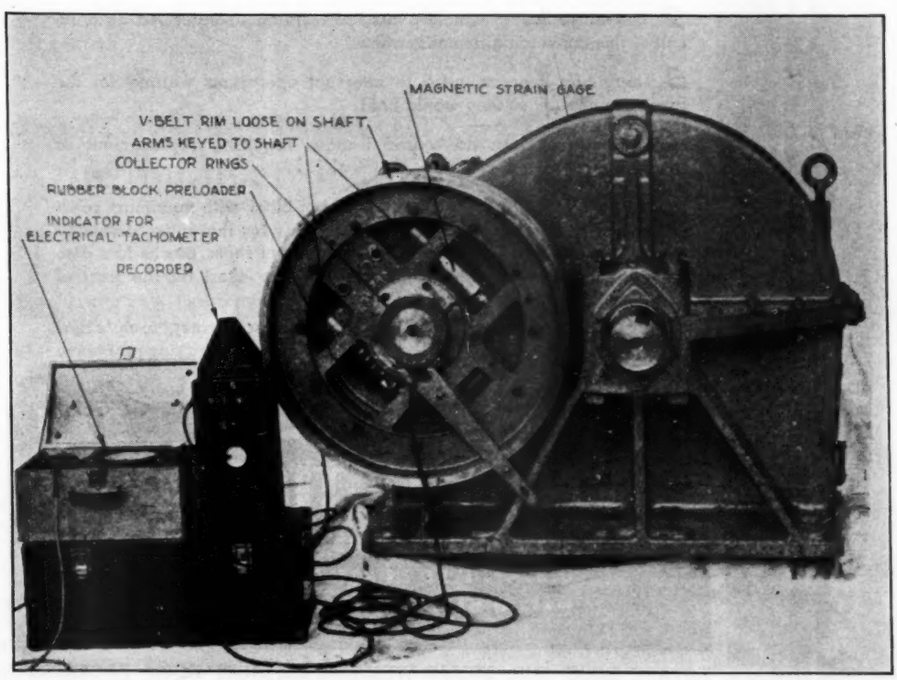


Fig. 3—Torque dynamometer

exclusively. Later practice demanded tapered strings of ¾-inch and ⅞-inch rods. Only recently, 1-inch rods have been developed for the top portion of heavily-loaded strings. Simple calculations by the production engineer showed that the unit stress in some strings often approached the endurance limit of the particular steel used. An increase in diameter of rods in the top section of the string seemed to be a logical remedy for reduction of failures. The cross-sectional area of the rod was increased, and the unit stress decreased accordingly to a point well under the endurance limit, with a marked reduction in failures.

Sucker-rod companies are now offering technical service to operators. Wells are weighed by engineers attached to the sales organizations, and cards showing load characteristics over the pumping cycle obtained with improved polish-rod dynamometers.

Hundreds of records are compiled on rod operation and failures in wells. The sales engineer is thereby fortified not only with technical, but with actual statistical, details of the greatest value in recommendations made to operators for reduction of rod costs.

One type of sucker-rod formerly served all field purposes. However, experience proved the need of various types of steel to withstand stresses imposed while the rods operated under various well environments. The production engineer, therefore, cooperated with the plant metallurgist by testing the various wells, and classified them according to rod type needed for the most economical performance.

Tubular Goods

While detailed data were assembled on sucker-rod stresses and performance, little was known concerning oil-well tubing, regardless of the numerous failures occurring in the heavier pumping wells. Alternate contraction and elongation of the tubing during the pumping cycle contributed to fatigue, particularly in the threaded section. Excessive failures in plain tubing caused operators to insist on upset tubing. The additional metal at the base of the threads decreased materially the number of failures. The upset portion was made long enough to permit rethreading, a common field practice in reclaiming worn and corroded tubing.

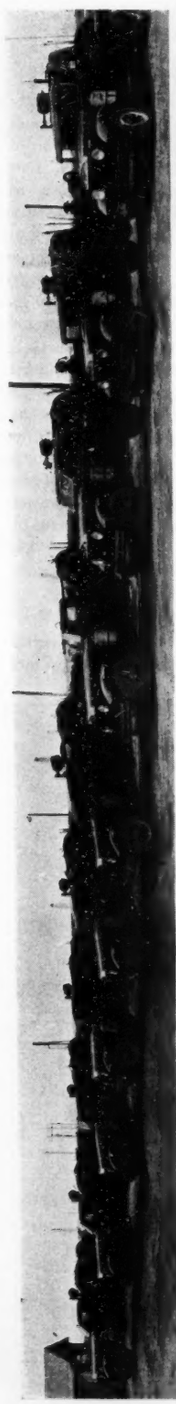
The pipe manufacturers were interested in the required endurance limits of tubing material, but had no idea of unit stresses present during pumping operations. However, pumping tests were made, eventually, with the tubing suspended from a suitable dynamometer. The loads during all portions of the pumping cycle were determined, and unit stresses calculated accordingly. Such tests indicated the advisability of anchoring the tubing in especially difficult wells, thereby reducing the load supported by the top joints, and preventing dropped tubing and the resulting fishing jobs.

Corroded tubing constituted a costly source of trouble, particularly in wells producing hydrogen sulfide and salt water with the oil. Numerous tests have been, and are being, made cooperatively between the operators and the pipe manufacturers—whereby the comparative life of various pipe materials is determined under actual operating conditions, and economic selection thereby facilitated.

Cooperation between operators and manufacturers, resulting in improved products, is well illustrated in the current work of the committees of the American Petroleum Institute on the standardization of oil-country tubular goods. Studies in thread design, number of threads, and tolerances have contributed largely to reduction of leaky joints. Stipulations concerning physical properties of pipe steels, and new mill testing methods to insure tight joints, have been proposed. New codes have been proposed for handling, running and pulling tubular goods; for methods of pipe inspection; and for the transportation, storage, field use, and reconditioning of tubular goods. Recommendations are also proposed concerning setting depths for casing and tubing. The awakened interest in circumferential welding of casing has led to proposed codes on field-welding technique. Considering the basic importance of pipe in drilling and producing operations, no more significant example of the benefits of joint effort presents itself than that of the committees of the American Petroleum Institute concerned with the improvement of pipe design and strength to meet the demands of deeper drilling and the more exacting practices of oil-well operation.

Drill-pipe failures and wear have not only constituted a major expense in the field, but have been a major manufacturing problem as well. Cooperative efforts have resulted in improved designs of the tool joint and improved field practices, with a consequent reduction of cost per foot of hole drilled. Tests have been proposed, under operating conditions, whereby stresses in the drill pipe may be determined by suitable extensometers placed at intervals along the pipe (Figures 1 and 2).

Two types of recording scratch extensometers have been used in actual drill-pipe service. One type records torsional strains. Another type records tensional and compressive stresses. Figure 2 shows a tension-compression extensometer mounted on an ordinary tensile-test specimen. A scratching device is provided to scribe a series of oscillations on



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The Results:

1 The first set of Thermoid Blocks ran steadily six months and 27 days, averaging a tubing job every two days (i. e. pulling one day and running back the next day). This was all on heavy rod pump installations.

2 The entire fleet of winches was 100% Thermoid equipped as a result of this convincing demonstration.

3 There has been no need to interrupt operations waiting for the brakes to cool off so they would hold.

4 There have been no scored flanges requiring replacement or resurfacing.

5 By installing at the "hot-spot" a type of block with maximum resistance to WEAR a more uniform rate of wear for the entire assembly has been obtained. The high holding power of these blocks has also resulted in better energization, requiring *less* effort on the part of the operator.

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. . . **Replaceable Valve Body** that can be economically replaced when worn.

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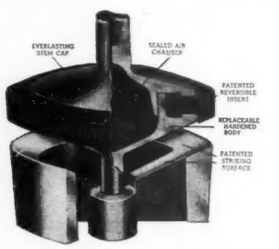

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Save breakage on pumps and give longer rod, liner and piston wear. These quality rods sell at prices only slightly above rods of inferior quality. Made of ***ball-race steel*** and heat-treated to extreme hardness before grinding. They are made for any make or size pump, and in any taper. We strongly recommend our Special Taper which has just the right amount of taper to stay tight under highest pressures yet sufficient contact to prevent the rod from pushing into the piston. This eliminates split pistons and makes the rod easy to remove.

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Thousands of operaors report that "Wearever" Pistons operate cheaper than any other piston. Here's why:

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Greater Operating Efficiency—With "Wearevers" it is not necessary to send the piston to the shop to renew rubbers. As the back section of the piston does not have to be removed from the rod, anyone can replace rubbers at the rig in a few seconds.

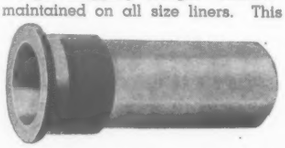
"MONEY SAVER" PUMP LINER

The greatest liner value ever offered. "Money Savers" cost approximately half as much as ordinary liners but give far better service because of:

Extreme Hardness—Tested to a Brinnell Hardness of 600 to 700, they have ***no soft spots*** to hasten breakdown of the liner.

Removable Gland—The wear-free gland can be quickly slipped off a worn liner and used over and over again. Thus you pay only the cost of the ***liner itself*** (without glands) when renewing MacClatchie "Money Savers."

Light Shipping Weight—Uniform wall thickness is maintained on all size liners. This weight reduction is very important on reduced sizes, particularly where transportation cost is a factor.



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a chromium-plated target. By photographing the record at 100X magnifications, the "strain curves" can be measured and the maximum stresses calculated. Figure 1 shows a torsion extensometer mounted on a length of drill pipe, together with extensometer housing and rubber protectors. Cooperative tests in the field between manufacturer and user should reveal the magnitude of actual stresses during drilling operations and the frequency of the occurrence of high stresses. Such information should lead to the reduction of drill-pipe trouble by proper corrections in the field and at the pipe mills. The field may thus aid the manufacturer by informing him of the strength requirements of drill pipe under unusual loadings. Such practices as welding of tool joints, pressure grips, streamline bores, and integral thread designs illustrate the marked progress made in recent years.

Oil-Well Pumps

Perhaps the production engineer and the sales engineer have cooperated to a greater extent, and considered a greater range of problems concerning oil-well pumping, than for any other phase of producing operations. New types of rod-operated pumps have been placed on trial continuously. Their proclaimed merits have been checked in the field, and conclusions reached after the preparation of detailed comparative records. The high initial cost of one pump may have been offset by the long periods between servicing jobs. Factors may have been present in well operations not foreseen by the manufacturer, and satisfactory performance in the field required before sales were assured.

Cooperative field tests are also common with pumping devices actuated by other means than sucker-rods. Preliminary test data may include special gauging facilities, records of fluid levels, bottom-hole pressures, input horsepower requirements, friction losses, operating and maintenance expenses. New equipment is often redesigned after preliminary field tests. Redesign may also be necessary where costs determined dictate changes. For instance, electric motors or internal-combustion engines may be found more economical after all costs have been determined. Unusual well conditions are often difficult to anticipate. For example, paraffin has been an obstacle in the development of a new method of pumping wells. Iron sulfide, clogging the pump parts, proved to be an unexpected impediment in another development. As a result, the original specifications are often altered after the initial tests have been completed, and after comparative report has been assembled by the engineers cooperating on the test.

Pumping Fronts and Pumping Units

A comparison of modern steel pumping fronts with the wooden types of yesterday presents a striking example of cooperative effort between the production and manufacturing engineers. The improved tripod samson-post and center bearings, interchangeable tail and beam-hanger bearings of the "swivel-type," "three-bearings-in-line" steel walking beams, improved beam hangers, and adjustable pitman with roller wrist-pin bearing give evidence of accelerated evolution in engineering design. The countershaft engine to bandwheel drive has received increased attention; and improved makes are readily reversed, and operate at minimum repair costs under the heavier pumping loads. Endless belts have been provided with adjustable idlers, with decrease in trouble and downtime as compared with the operation of open-end belts.

One belting company cooperated with the operators to the end that a definite classification was made of the wells with regard to belt centers. Endless belts were thereby stocked in standard lengths, with profit to the belting company and a smaller warehouse stock for the operator.

Portable single- and double-reduction geared pumping units have appeared in increasing numbers during the past few years. The rating of these

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units has been largely a matter of field study, attempting to profit by prior failures and putting into the machines adequate factors of safety. Company engineers have conferred with the manufacturers' engineers concerning suitable ratings suggested by the American Gear Manufacturers' formula, which were later adopted by a committee of the American Petroleum Institute. Certainly, the field point of view must be considered seriously in the adoption of satisfactory ratings, and the units designed accordingly.

Although the comparative service of pumping units can be approximated under similar conditions in the field, little is known of the stresses and pressures developed in shafts and gears under actual pumping conditions. It is, therefore, necessary to measure not only the usual polish-rod load and horsepower, but the variation in torque in the gear shafts by means of a suitable torque dynamometer.

Some of the problems investigated in connection with torque dynamometer testing include:

1. The relation of gear torque loads and polished-rod loads.
2. The relation between speed and stroke to polished-rod loads.
3. The effect of type and amount of counterweights on torque loads.
4. The relation of gear loads to engine characteristics.
5. The over-all efficiency of pumping units.
6. The study of multiple well loads and geared units.

Figure 3 shows the torque dynamometer and gear box, including the recorder drive and the tachometer magneto. A magnetic-type strain gauge is mounted within a floating sheave on the high-speed gear shaft. A torque arm is mounted rigidly on the same shaft. The torque is transmitted from the pulley through this strain gauge, and measured; and then to the torque arm driving the high-speed gear shaft. It will be noted that the recorder drive permits taking the polish-rod card, the torque dynamometer card, and the tachometer card in relation to crank angle instead of the usual polish-rod load.

Figure 4 shows results obtained with the gear-shaft torque dynamometer. Curve 1 shows the torque due to the polish-rod load. Curve 2 shows the torque due to counterweights. The net difference is the theoretical gear torque shown as a dotted line in curve 3. The recorded gear torque is taken from the photographic record from the torque dynamometer. The relation of recorded to theoretical torque, and the effect of engine impulses on torque load, are clearly indicated.

The encouraging results obtained from the afore-mentioned tests, conducted cooperatively by manufacturing and production engineers in the field, provides a striking illustration of progress possible in pumping equipment; also the indication of the need for further investigation along definite lines in the near future.

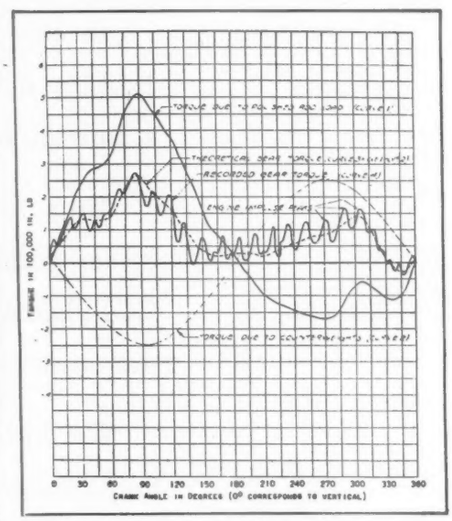
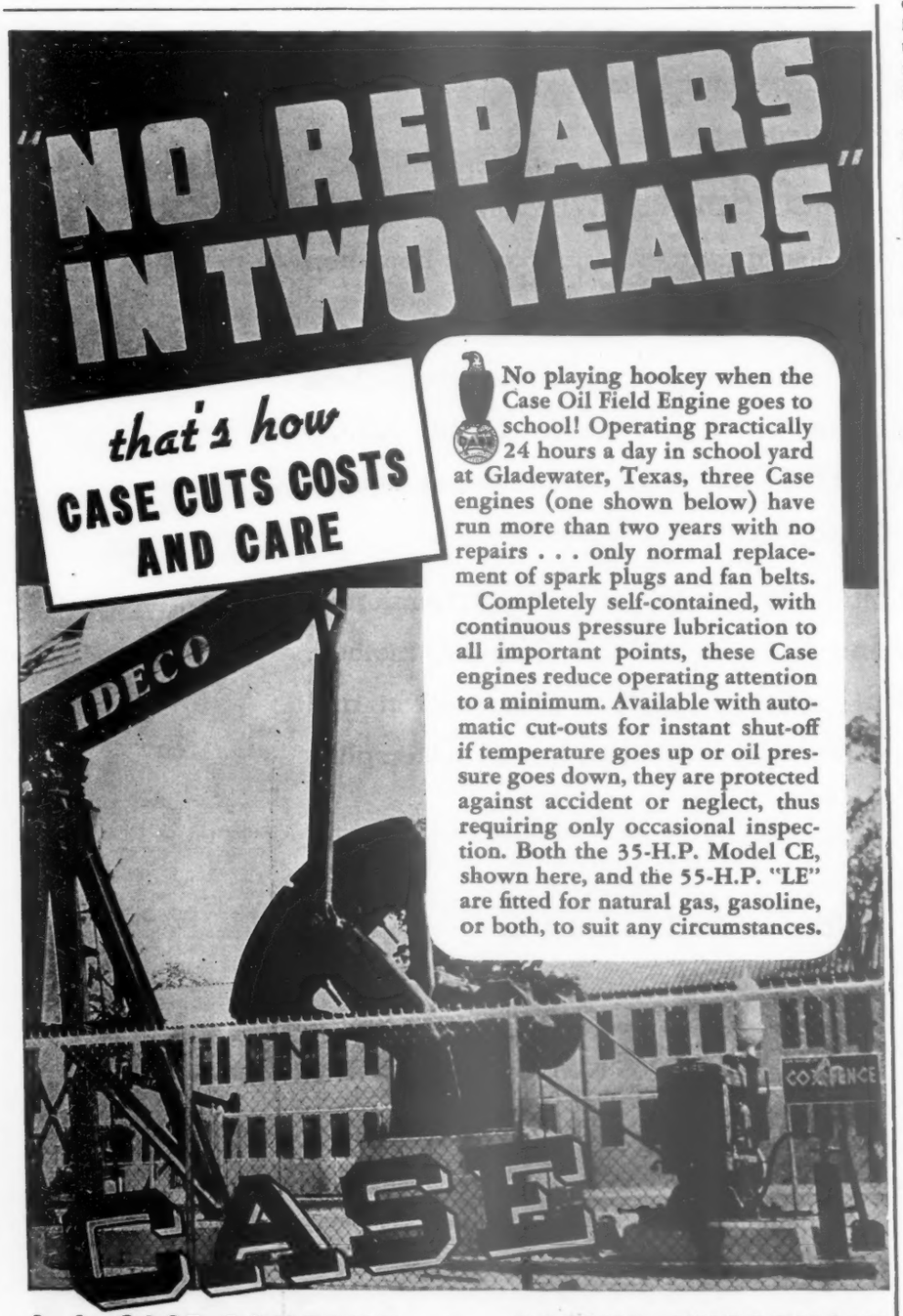

TORQUE DUE TO POLISH ROD LOAD (CURVE 1)
THEORETICAL GEAR TORQUE (CURVE 3)
RECORDED GEAR TORQUE (CURVE 4)
TORQUE DUE TO COUNTERWEIGHTS (CURVE 2)
TORQUE IN 100,000 IN. LB
0 30 60 90 120 150 180 210 240 270 300 330 360
CRANK ANGLE IN DEGREES (0° CORRESPONDS TO VERTICAL)

Fig. 4—Torque and polish-rod dynamometer curves

When the designer came to the field and investigated personally the operator's point of view, progress in the practical design of oil-field internal-combustion engines accelerated greatly. He learned, first-hand, of field operating conditions involving speed and speed ratios, counterbalancing, improper alignment of crankshafts, faulty ignition, improper mixing of fuel, inadequate lubrication, scale-encrusted water-jacket passages, regulation, and general safety features present for protection of workmen. Perhaps one of the most important observances was the accessibility of the engine for ordinary repairs by the help usually available around the lease.

The production engineer has contributed to progress by determining the engine horsepower requirements of pumping wells with the polished-rod dynamometer, and selecting speed ratios between engine and crank that permitted most efficient operation of the engine.

Careful records kept by the production engineer on engine operating and maintenance costs proved invaluable for comparing the relative economies of various makes. In addition, the production engineer learned to compare the relative ruggedness


"NO REPAIRS IN TWO YEARS"
that's how
CASE CUTS COSTS AND CARE
No playing hookey when the Case Oil Field Engine goes to school! Operating practically 24 hours a day in school yard at Gladewater, Texas, three Case engines (one shown below) have run more than two years with no repairs . . . only normal replacement of spark plugs and fan belts.
Completely self-contained, with continuous pressure lubrication to all important points, these Case engines reduce operating attention to a minimum. Available with automatic cut-outs for instant shut-off if temperature goes up or oil pressure goes down, they are protected against accident or neglect, thus requiring only occasional inspection. Both the 35-H.P. Model CE, shown here, and the 55-H.P. "LE" are fitted for natural gas, gasoline, or both, to suit any circumstances.
IDECO
CASE
J. I. CASE COMPANY • RACINE, WISCONSIN
Distributed and serviced in the Mid-Continent field by Southwest Equipment Company, Dallas and Kilgore, Texas. Stocks carried at Dallas, Houston, Kilgore, Texas; Shreveport, Louisiana; Oklahoma City, Oklahoma; Wichita, Kansas.

of engines, and drew obvious conclusions concerning their probable useful lives. . . .

Change is ever present in rotary equipment. Witness the items comprising a drilling outfit, that have been set aside as "obsolete" before their useful life has been finished. This history and the part that new designs have played in the search for oil at depths below 13,000 feet are well known. Demands have come from the field for steels of increased physical properties, and these demands have been answered by the plant metallurgist. The operators have shown the importance of various drilling controls to insure straight holes and minimum trouble with drill pipe and bits. The plant engineers have solved these problems by designing differential drives, weight and torque indicators, tachometers, improved drill collars, and drilling bits.

The economics of transportation have been explained to the manufacturer, with the result that unitized parts have been provided to facilitate moving and rapid installation. Possible savings in water and fuel have brought about marked changes in boiler, feedwater heater, superheater, and steam-engine design. For other operations, the internal-combustion engine and the electric motor have proved their efficiency.

Mention must also be made of the committees of the American Petroleum Institute concerned with rotary-drilling equipment. Consider a few items recently under discussion: integral tool-joint threads on grief stems; standards on slush pumps; standards on brake blocks and bands; standards on rotary hose, transmission chain, and wire-rope sheaves; and the new internal-flush full-hole tool joint for use with external-upset drill pipe.

The list is long, but no better illustration of work from the two ends and toward a common purpose can be offered than that of improvement in the many phases of rotary-drilling equipment.

Counterbalances

Proper counterbalancing of pumping wells is a problem of mutual concern to producer and manufacturer. The producer is concerned with proper pumping motion, savings in power costs, and decrease in maintenance expense. In addition, both producer and manufacturer are concerned with proper type, design, and rating of counterbalance to approach most effectively the desired field performance. The many variables entering the counterbalancing problem often require more than theoretical analysis. Carefully-planned field tests are performed, and data gathered on polished-rod loads and horsepowers, crankshaft torques, speed and inertia variations, fluid levels, pumping pressures, acceleration effects, and repair items. Analysis of such data may indicate the proper type and amount of counterbalance to use; or it may indicate the need of more than one type, operating together for the best results. A real effort has been made in recent years by manufacturer and producer to solve jointly this problem with cooperative and exhaustive field tests.

Separators

Although oil and gas separator design has progressed rapidly from the manufacturer's efforts, yet the critical tests in the field have been conducted jointly, with mutual concern, regarding the capacity to handle the required volumes with efficient separation. Progress has also been made in the design of the equipment, with particular attention to its strength as an unfired pressure vessel. Fully automatic controls and improved safety valves have proved their worth to the field through reduction of operator attendance and hazard.

An interesting illustration of practical cooperation on separator problems concerns the use of "drilling-in" separators as used in the Oklahoma City field. The great amount of trouble encountered with sand cutting is well known. The regular separators furnished the field originally sometimes cut out within 15 minutes after the well had been opened. After several proposed remedies, it was concluded finally that the most effective means of reducing the cutting of sand was by using larger inlets in order to reduce the velocities of the sand-laden fluids. In addition to using the larger lines, lead-covered plates and diverters helped to give minimum cutting and continuous operation.

Conclusion

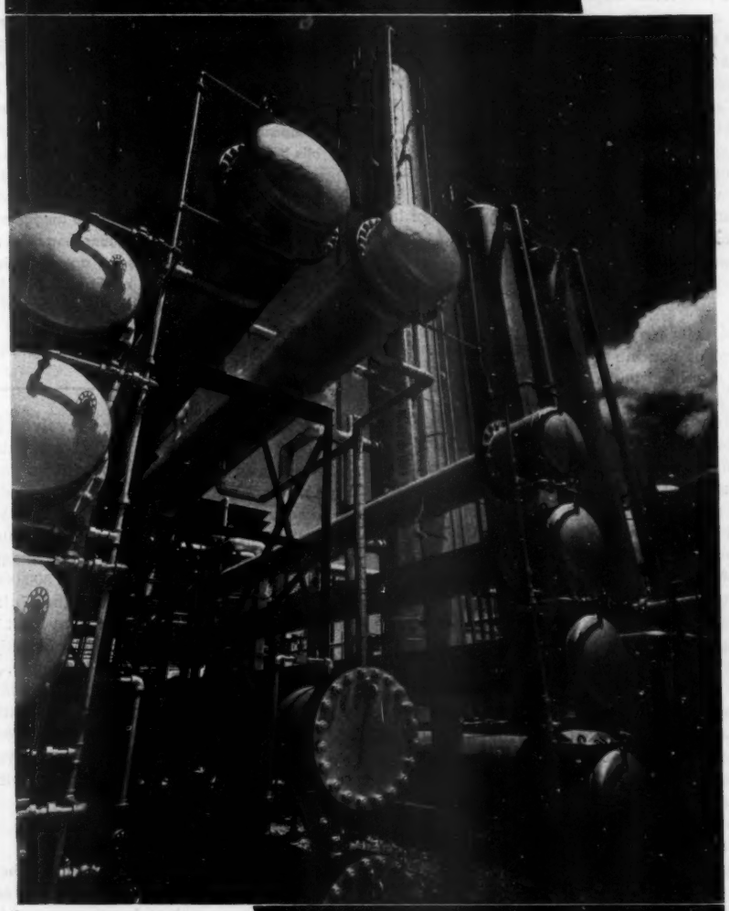
It is impossible to list the many equipment problems confronting the producer today. The many specifications and standards for equipment of the American Petroleum Institute indicate the volume of work, directed jointly by producer and manufacturer, towards a common objective. The sales engineer has grown to be a specialist and consultant, and the producer has profited accordingly. The production engineer has learned much of design and factory methods. Accordingly, he has helped harmonize the manufacturer's idea of what he is selling with the producer's idea of what he is buying.

Not many years ago the drilling of a well to 10,000 feet was considered more or less fantastic. Today wells are drilled to 15,000 feet and deeper wells are not impossible in the near future. The operators, manufacturers, and engineers—with their combined resources and knowledge of materials, design, and past performance—are prepared to move ahead to new fields of conquest. It is believed that no more fascinating program exists than that of developing improved materials and designs, to meet demands from the field increasingly difficult, in the accelerated search for petroleum today.

Acknowledgment

Acknowledgment is gratefully made to the following for material use in the preparation of this paper: Messrs. L. K. Browning, S. M. Jones Co.; Howard Texter and Clemons Roark, National Supply Co.—Spang Chalfant Division; Roscoe Ayers and J. R. Mahan, National Supply Co.; Dr. Emory Kemler, Gulf Oil Corp.; also to Messrs. Jack Durkee, A. M. Byers Co.; John Fuller, Oil Well Supply Co.; Earl Byers, Parkersburg Rig & Reel Co.; Jay Walker, National Tank Co.; Arthur E. Crockett, Jones & Laughlin Steel Corp.; W. W. Trout, Lufkin Foundry & Machine Co., and C. A. Young, American Petroleum Institute.

TUBE AND SHELL CONDENSERS
AND HEAT EXCHANGERS
Fabricated and Erected to your Specifications



— Wyatt's

Significance of Petroleum Product Tests: COLOR

By W. L. NELSON

There are three main reasons for conducting tests of oil products, and the tests designed for each of the three purposes should not be confused with one another.

Control tests—for plant operation and control.

Service tests—for performance when in use.

Design tests—for engineering design and economic studies.

The first of these, or control tests, are useful to plant operators or marketers because they serve as a quick check on the continuity of the plant operation. Thus, by taking the gravity of a stream of oil an operator can in a few minutes determine whether his equipment is working as well as it did an hour ago, or yesterday. For a particular stock and plant, such tests may signify to some extent the performance properties of the particular material, although in a general way the property may bear no relation to performance. As an illustration—a gravity of 60 A.P.I. for gasoline may be of significance to a Pennsylvania refiner, but to require California refiners to meet a specification of 60 gravity should be both foolish and impossible because comparable California gasolines would have a much lower gravity. For these reasons, the tests used for control purposes must be relatively simple ones that require only average laboratory talent, can be performed in a short time, and are capable of exact duplication.

Service Tests

Service tests may partake of the simplicity of the control or routine tests, but since they serve the more dignified and difficult purpose of measuring the ability of the material to perform during service, they are usually more complicated than the routine or control tests. Obviously, a test method may be satisfactory for both control and service purposes and many of the common tests serve this dual purpose. Examples of tests that are useful for several purposes are, the A.S.T.M. distillation test, the Reid vapor-pressure test, and the flash-and-fire tests. However, a single test is seldom perfect with regard to all types of requirements.

The third group of tests or design tests are mainly of the evaluation type by means of which yields are determined, and such properties as corrosiveness or sensitivity to discoloration by heat. They may also be extended to include studies of the ways in which processes are conducted, such as suitable recycle ratios for cracking plants, rates of filtration in treating or dewaxing plants, amounts of chemical required for treatment, and the equilibrium relationship between phases. Thus, the design tests partake of research or at least plant problems.

The refinement of motor oils to pale colors is an extremely expensive operation and seems to have a real justification except to cater to a fastidious public. Color seems to be indirectly related to the amount of carbon deposited in automotive engines, but the improvement can probably be accredited to the more severe refinement rather than the direct effect of color. There is some indication that the dark colored constitutents of oil may be better lubricants than the light ones.

The requirement of a color of 30 Saybolt for gasolines seems entirely unjustified and is being avoided at the present time by most refiners by the use of dyes. Color is usually related to gum content, although many quite yellow gasolines do not contain abnormal quantities of gum. The most serious criticism of the current color requirements for gasoline is the treating cost and the loss in antiknock properties that are involved in producing a white product. Although estimates of just what it costs to produce too white a gasoline are complicated by many factors, it is probably safe to say that the cost of treating would be 15 per cent less on an average than it is today. Thus, for the entire industry, a saving of the magnitude of $2,000,000 a year for the more than 500,000,000 bbls. of gasoline that is produced in the United States each year is possible. Likewise, at least $2,000,000 a year can be saved by treating lubricating oils to lighter colors than those now in vogue. Such figures can be only estimates because chemical treatment is not conducted for improvement of color alone and because there are many different processes in use, but the figures given above are conservative ones and it is entirely possible that the saving might be far greater.

The following discussion and others which will appear in subsequent issues of The Oil and Gas Journal are for the purpose of emphasizing the responsibility of the refining industry in specifying only those tests that are truly significant to the public in the operation of its machinery. The literature is full of writings of how to perform tests, comparisons of tests, and the properties of various oils by these tests, but far less can be found of how various materials behave when used. It is obvious that refinery control tests and engineering design tests are purely secondary to the fundamental purpose of tests and specifications—namely, to serve as an index of the fitness of an oil for industrial service. Committee D-2 of the A.S.T.M. has long been active in judging the significance of various tests and in 1934 and 1937 published a booklet, "The Significance of Tests of Petroleum Products."

Color and Treatment

The color scales now employed by the industry are not entirely adequate for the study of treating operations because they do not measure the actual depth of color. These scales are used merely to compare the color of the sample with arbitrary color disks which are not related in a logical way to one another. Thus, a treating operation may remove half of the coloring material in an oil, but the color of the oil by the scales now in use would not be half of its original color.

Another difficulty with the customary color scales is that they cover only a limited range of color. In this way two stocks that are of different color may both appear to be simply black or very dark, whereas one will require much more chemical treatment than the other. Thus, an oil stock that is simply another black colored stock may prove to be a joker to the treating department because it may be twice as black or colored as the stocks which have been handled previously.

Still another complication arises because if two oils of different color are mixed together, the color of the resultant oil does not fall proportionally between the colors of the two original oils. As an example, if equal parts of two oils having colors of 2 and 6 are mixed together, the resulting mixed oil will not have a color of 4.

Finally, the common scales are discontinuous ones which can be evaluated accurately at only fixed intervals such as 1, 2, 4½, etc., and hence the color values falling between these fixed points can only be estimated. The common difficulty of comparing colors of different casts or shades is also troublesome but little can be done about this difficulty.

True Color Scales

For these reasons, a number of investigators[1,2,3] have developed True Color Scales which embody most of the requirements that are mentioned above. Parsons and Wilson[2] have related a True Color Scale to the Lovabond scale, Weir and others[1] have developed the relation of true color to the N.P.A. scale, and Rogers and others[3] show the relationship between true color and the Tag-Robinson, N.P.A. and Saybolt scales. The use of True Color Scales is complicated by the fact that each oil has a different cast or grayness and hence each True Color Scale must be based on a specific color disk or standard oil in order to get dependable and reproducible results. The methods now available are complicated and hence they have not been used widely.

The usefulness and need of a True Color Scale is obvious—it may be used to measure the degree of decolorization that has been accomplished, to measure the relative blackness of various raw stocks, to compare the efficiency of different treating clays, to measure the extent of entrainment of a black stock into a light-colored on in a fractionating system, and in general to act as a measuring stick for the effectiveness of all types of treating operations.

References

1. Weir, Houghton and Majewski—"Control of Color of Petroleum Oils by Acid Treating"; A.P.I. paper of Nov. 13, 1930, at Chicago.

2. Parsons and Wilson—Ind. Eng. Chem., 14, 269-78 (1922).

3. Rogers, Grimm and Lemmon—Ind. Eng. Chem., 18, 164-9 (1926).

QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph. D., Technical Editor

Determining Endpoint by Standard Distillation Method

We are having difficulty in obtaining checks on endpoint with other laboratories. Our procedure has been to distill to the 95 per cent mark at 4 to 5 ml. per minute, then turn the electric heater to maximum, continuing at 4 to 5 ml. per minute. Without increasing the heat, we get 20° lower. Should the temperature be increased at the 95 per cent recovery mark, or should the rate of 4-5 ml. a minute be continued until all but 5 ml. have distilled and then regulate the heat for a 3-5 minute period? Do you recommend gas burners in preference to electric heaters? What is the proper way of heating after the 95 per cent mark?—H. J. E.

The standard A.S.T.M. distillation test for gasoline involves a procedure for vaporizing the liquid under specified conditions, which have been set forth in minute detail. These must be followed if concordant results are to be obtained when making tests to confirm specifications or different operators. There are many possible variations that may be made with respect to both apparatus and method. The application of heat is important, because it has a direct relation to the rate of distillation. A suitable gas burner or electric heater may be used. Both should be equally reliable, if they conform to the requirements of the method.

The quotation following is from the A.S.T.M. Standard Method of Test for Distillation of Gasoline, etc., Designation, D 86-35.

"No adjustment of the heat shall be made after the liquid residue in the flask is approximately 5 ml. unless the time required to bring over the last 5 ml. of distillate and reach the endpoint exceeds five minutes. The endpoint is the maximum temperature observed on the distillation thermometer and is usually reached after the bottom of the flask has become dry. If the bottom of the flask is not dry the operator shall record this fact.

"In case the time required to bring over the last 5 ml. of distillate and reach the endpoint exceeds five minutes the test shall be repeated and the heat shall be adjusted when the liquid residue reaches 5 ml. This adjustment may be either an increase or a decrease but must accomplish the purpose of bringing the period required to vaporize the last 5 ml. of distillate and reach the endpoint within the limit of three and five minutes."

Benzol and Toluol for Motor Fuel Use

What are the standard specifications for benzol and toluol which is to be used for blending with gasoline for making motor fuel?—R. S. K.

There are no standard specifications covering the quality of benzol and toluol for use as motor fuels. These compounds are consumed in large quantities for the preparation of organic chemicals; they also have a wide application in the technical and pure grades. The demand for both benzol and toluol is so extensive that the market price remains high, very seldom less than the retail price of gasoline. Consequently they cannot have a wide use as motor fuels if used alone.

The important property possessed by these compounds that is of importance for motor fuel is the high antiknock value. Benzol is used in considerable quantities for raising the octane rating of some gasolines that are deficient in this respect. The addition of either benzol or toluol to a gasoline must always be considered as to the other action that may result. The most important is that of the introduction of objectional substances such as sulfur and gum-forming compounds.

Toluol is not so desirable as benzol because of the high boiling point, 230° F.; benzol boiling at 176° F. The freezing point of benzol is high, 42° F., so it cannot be used alone in the regions where very low temperatures are encountered. Sulfur and gum should not be present when mixing with gasoline in quantities large enough to bring a blended motor fuel below the recognized specification requirements.

The Refinery Product Mazout

What is the material mentioned as a product of foreign refineries under the name Mazout?—E. I. A.

Mazout appears to have originated in the Baku district, being used to indicate a petroleum waste material. Gurwitsch-Moore gives this explanation:

"So long as the manufacture of kerosene only was understood, and before the apparatus for burning liquid fuel was invented, the petroleum residua (mazout) were only looked upon as a very troublesome waste product, which was either allowed to flow into the sea or burned in special pits. Mazout, as is known, is now the raw material for the manufacture of lubricating oils, and on the other hand as a fuel forms one of the most important products of the petroleum industry."

Reference: Gurwitsch-Moore, Petroleum Technology, page 452.

Questions on Petroleum Technology may be sent to Dr. Charles K. Francis, The Oil and Gas Journal, Tulsa, Okla. When a copy of the answer is desired postage should be enclosed.

CHEMICALS FOR THE PETROLEUM INDUSTRY

Creosote

Use—Preservation of wood, antiseptic and deodorizer.

Form—Yellowish to brown oily liquid, obtained by the distillation of wood tar. Odor of burnt wood.

Formula — Uncertain composition, chiefly mixture of several phenols.

Specific gravity—1.076 (approximate).

Boiling point—400° F. to 428° F.

LIMITATIONS

Creosote, being an impure product, is seldom purchased on exact specifications; sometimes limited on water content, distilling range or phenols.

Crude Oil From Oligocene Wells in Manvel Pool, Texas

Will you furnish information showing analysis of what is known as Manvel crude oil from the oligocene formation?—F. H. A.

The Manvel pool is located in the northern part of Brazoria County, Texas. The oligocene wells produce an oil, from the formation at 5,600 to 5,700 feet, which has these properties:

OLIGOCENE OIL MANVEL POOL, TEXAS
(Properties of the crude oil)

Gravity, A.P.I.	28.6
Flash, °F.	90
Vis. at 100° F.	77
Pour, °F.	0
Sulfur, per cent	0.22
Initial boiling point, °F.	230
Tar, per cent	8.0

(Yield on fire and steam distillation)

		Per cent
Gasoline		15.0
Gravity	47.2	
I.B.P., °F.	168	
Max.	409	
Gas oil		35.0
Gravity	30.5	
Flash, °F.	192	
I.B.P.	402	
Max.	724	
Wax distillate		45.0
Gravity	23.6	
Flash, °F.	385	
Pour	70	
Fuel oil		3.0

The Manvel pool produces approximately 300,000 bbls. per month from 105 flowing and 58 pumping wells (March, 1937).

Note.—The properties of the oil produced in this pool from the miocene formation were given in the issue of May 26, 1938.

Quality of Crude Oil Marketed in the United States

We wish to obtain complete analyses of the marketed grades of crude oils. Will you please supply these if you have them available?—G. E. S.

The marketed grades of crude oils include every type of oil found in the United States. Consequently, complete analysis are not available in a single volume. The U. S. Bureau of Mines publishes, from time to time, reports showing the properties of special oils, being chiefly descriptions of oils that have been recently discovered.

Crude oils are commonly marketed in the United States on the basis of A.P.I. gravities; the price tables being arranged from 18 and below, to 40 and above. The A.P.I. gravity is an approximate indication of quality as concerns the lighter constituents, such as gasoline, naphtha and kerosene. In most instances the purchasing agency requires the oil to be clean and practically free from water. The sediment is restricted to a maximum of 1 per cent and the total sediment and water not over 2 per cent. A few companies require even more stringent specifications.

Most fields furnish oil that is free from corrosive substances such as organic acids and sulfur compounds but occasionally abnormal oils are found and in such cases the purchasing agency enforces specifications that require purification before delivery to the pipe line companies.

PROBLEMS FROM READERS

Edited by L. G. E. Bignell

Underground Storage of Natural Gas

Referring further to the question asked by "G. W." and answered on this page in the April 21, 1938, issue about the underground storage of natural gas, the following references have been submitted by E. G. Swanson, Washington, D. C., and are taken from a bulletin of the American Gas Association, Inc., covering the 1930 convention of that association indicating the idea of underground storage is not new.

The modern conception is to store gas in the same formation from which it has been produced along with the oil and in this manner conserve practically all of it for future use. This is not strictly in line with "G. W." 's question but it is a form of natural gas storage. Quotations from Mr. Swanson's article follow:

During the summer of 1915, underground storage of natural gas was inaugurated in Welland County, Ontario, Canada. This is believed to be the first successful endeavor to return natural gas underground for the purpose of storage at a different locality from where it was produced. Several years prior thereto, an effort had been made to dehydrate an abandoned salt mine located near Cleveland, Ohio, with the intention of storing natural gas therein, but the attempt to remove the water was unsuccessful and the project was abandoned. From this endeavor was conceived the idea of returning natural gas to former producing strata for the purpose of storage. It was felt that the presence of water was practically the only thing which would interfere with such storage, provided the producing limits were fairly well defined and protected against offset drilling.

Encouraged by the experience in Canada, in the following year of 1916, the experiment was applied to the Zoar field (located about 22 miles from Buffalo) in which there were 10 or 11 wells within an area of about 1 square mile which had been reduced to an average rock pressure of about 48 pounds. In this experiment, the gas was measured in and out.

The wells used were of an average depth of about 1,860 feet and had been productive from what is called the "Flint," a name given by drillers to the formations geologically known as Corniferous limestone, Onondaga limestone and Oriskany sandstone. Gas production in the Zoar field had commenced about the year 1888 and the production had been found very irregular. The initial rock pressure was a little over 600 pounds, which by 1914 had declined to about 100 pounds, when a compressing station was erected so that the remaining gas could be delivered from that field. Subsequently, the pressure and production declined rapidly and by the spring of 1916, the rock pressure had been reduced to about 48 pounds.

During the summer and early fall of 1916 approximately 50,000,000 feet of gas was put into storage. The first input was about 13,000,000 feet. After observing the pressure for a few days there was a second input of about 20,000,000 feet and again after a short pause a further input of about 17,000,000 feet. In the succeeding years the quantities placed in storage each year were materially increased and in a single year considerably more than 200,000,000 feet was placed in storage. Due to natural production from some of the wells, the total amount of gas which has been withdrawn from these storage wells is about 40,000,000 feet in excess of the amount put into storage.

Subsequent to 1924, several holes had been drilled in this storage field for the purpose of more rapidly releasing the gas in storage. Some of these holes failed to penetrate portions of the rock containing the stored gas and were valueless for the purpose intended. However, other holes materially increased the delivery capacity of the field. This storage field is being used constantly and as it is located not far from a large market, has a very great value. Part of the gas stored is transported from Pennsylvania gas fields, more than 100 miles' distance.

Air Lift for Water Well

Would it be economical to consider producing oil wells by means of compressed air where the depth is 1,200 feet and the volume of water necessary to handle is as much as 2,000 bbls. per day, containing from one-half to 1 per cent oil?—R. N. S.

Replying to your letter asking our opinion about an air lift problem we are sorry we cannot help you. The information you have furnished is insufficient to permit making any estimate of power requirements.

You do not state the fluid level in your well which is important because this condition would influence submergence and in turn submergence determines the lift necessary to deliver the fluid to the surface.

If for instance the fluid level in your well was at 600 feet below the surface the submergence of the ejector pipe could be 50 per cent and the efficiency of the lift might be as high as 45 per cent of the theoretical horsepower. On the other hand if the fluid is near the bottom of the well and the submergence low then the efficiency would decrease and might be as low as 10 per cent of theoretical.

It would also be necessary to know something of the size casing in the well, the character of the oil, the kind of power available and a number of other things in order to give you any kind of an answer that would be worth while.

How Royalty Is Paid

Is the royalty paid to a landowner by an oil producing company a percentage of the selling price of the oil, or is it a fixed price per gallon? Also do oil leases run for a definite period of years or until the oil is exhausted or reaches a certain low production level?—A. P. M.

The following answers to your questions have been taken from Samuel H. Glassmire's book, "Oil and Gas Royalties."

The royalty of the oil and gas lease is paid to the landowner or owner of the royalty rights, by the oil purchasing agent, or pipe line company. The purchaser paying the producer for seven-eighths of the value of the market price of oil and one-eighth of the same to the royalty owners, as per the signed division order.

Oil leases have two terms, the primary, or definite term, and the secondary, or the indefinite term. The definite term is for 5 to 10 years. The indefinite term is for "as long thereafter as oil and gas are produced."

Flooding Projects in Oklahoma and Kansas

Are there any available statistics indicating the total acreage under water-flood in Oklahoma and Kansas? Also about the results of such flooding operations.—S. E. Y.

The following data has been taken from the 1938 yearbook of the National Oil Scouts Association of America and covers the period up to January 1, 1938. The first flood was started in May, 1931, in northeastern Oklahoma, and on April 1, 1935, in southeastern Kansas.

	Oklahoma	Kansas
Acres under flood	3,496½	751½
Water input wells	1,162	173
Oil wells	957	162
Water well spacing, av., acres	3.00	4.325
Oil well spacing, av., acres	3.65	4.625
Recovery of oil, total bbls.	2,196,065	110,866
Recovery per acre, av., bbls.	625	147

There are 26 flooding projects under way in Oklahoma and 15 in Kansas. The water-flood areas are located in Nowata, Osage, Rogers, Tulsa and Washington counties, northeastern Oklahoma, and Franklin, Miami, Greenwood, Coffey, Anderson, Linn, Bourdon, Allen, Woodson, Elk, Wilson, Neosho, Crawford, Cherokee, Labette, Montgomery and Chautauqua counties in southeastern Kansas. There are 29 oil companies engaged in these water-flooding operations and five different sand zones are reported as being flooded with water. These sands are Bartlesville, Layton, Peru, Skinner and Dutcher. The Bartlesville sand appears to be the best adapted to this secondary method of recovery.

Engine Ratings

I often see in the manufacturers' advertisements of internal combustion engines statements of displacement and torque. I understand the meaning of these two terms, or at least I think I do, but what is the reason for using those terms. Just what is the significance behind them?—H. J. H.

The custom of giving displacement and torque in advertisements concerning internal combustion engines has been built up, largely through custom, but so far as we can learn has not been codified by any association or society.

The use of displacement indicates the cylinder capacity to contain air and fuel vapors and is in this way a unit of measurement which will vary with each engine.

The torque, expressed in foot-pounds, is another measure of general efficiency and indicates the mechanical and volumetric efficiency of the engine. Torque also indicates rotating speed at which the engine is most efficient and this critical or most efficient speed should also be known.

With displacement and torque known it is possible to draw comparisons of engine performance but piston speed is also an important factor to be considered but if the rotating speed of the engine is known together with length of stroke it is possible to compute the piston travel and use this figure in the general comparison.

As stated these customs have been built up through the years and are now quite generally accepted but we do not know that they are standardized.

FIELD OPERATIONS

Summarizing the Week's Developments

OKLAHOMA—A wildcat found big gas production in section 8-1n-2e, opening Murray County's first gas field. Operators were preparing to test a Logan County pool opener in section 27-6-1e, after it blew in. An eastern Payne County discovery well was estimated good for 100 to 300 bbls. of oil, with 5,000,000 feet of gas. Testing continued at wells in section 12-7-2w, Cleveland County, and section 12-17-1e, Payne County, both of which opened pools.

KANSAS—The Edwards pool of Ellsworth-Rice counties was extended three-fourths mile northward in section 27-17-8w. The Sittner South pool discovery well in section 2-22-12w, Stafford County, was completed as was a wildcat gas well in section 12-21-2w, McPherson County. A Finney County wildcat cored saturation in lime but failed to produce after drilling plug and was going deeper.

NEW MEXICO—A new area that may be classed as a 2½-mile northeast extension of the South Eunice field, or a new pool, was uncovered in section 2-22-36, Lea County. An outpost 4 miles northwest of the Vacuum field was swabbing 20 bbls. of oil daily while drilling ahead in pay.

TEXAS—A 4,440-bbl. well was completed in the Avoca pool in Jones County. The Seminole field in Gaines County was given a 4-mile extension northwesterly. A well further linking the scattered Wasson area in Gaines and Yoakum counties is showing oil and high pressure gas. An oil well between the Duggan and Slaughter pools and a number of extensions in West Texas were of interest. The K.M.A. pool completed 20 wells but drilling has declined. In Southwest Texas a pool was opened in Duval County, but the discovery well was not yet completed. Two other wildcats in the Laredo district are showing oil. A new pay was opened in the West Saxet pool in Nueces County. In the Gulf Coast area a deep sand well on the Conroe trend yielded 624 bbls. per day at 8,163-68 feet in the Segno pool, Polk County. Production in Galveston Bay was extended 1,800 feet. On the Louisiana side of the coast a 7,350-foot dry hole was finished in East Baton Rouge Parish.

TEX-LA-ARK—The Village pool in Columbia County, Arkansas, was assured by the completion of Standard Oil Co.'s test which flowed 406 bbls. in five hours and was then shut in for lack of storage. It produces from Smackover lime. The deep pay discovery in the Zwolle, Louisiana, district, flowed by heads over 40 bbls. per hour. An important gas development in the Sugar Creek, Louisiana, field was an extension well good for 35,000,000 to 50,000,000 feet of gas per day. It showed some oil. Cotton Valley's deep pay was extended 1¾ miles southeast. The Schuler field in Arkansas was twice extended by good wells.

KENTUCKY—Three completions in the new Birk City pool in Henderson County included an 850-bbl. and a 500-bbl. well.

MICHIGAN—A 1,000-bbl. well in the Edenville pool, Midland County, was the feature of the week in this state.

Completions in All Fields

(Week Ending May 28, 1938)

	Oil	Gas	Dry	Total	1938 total comp. to date	1937 total comp. to date
N. Y., Pa. and W. Va.	41	5	2	48	1,712	1,587
Ohio	5	13	6	24	361	400
Indiana	0	0	1	1	38	40
Kentucky	14	0	1	15	314	143
Illinois	21	0	3	24	390	27
Michigan	11	0	7	18	314	356
Kansas	30	3	8	41	728	952
Oklahoma	19	1	8	28	701	1,130
Texas:						
North Central Texas	61	1	23	85	1,289	1,122
West Texas	33	1	4	38	953	1,043
Texas Panhandle	11	3	0	14	261	266
East Texas	43	0	1	44	945	857
East Central Texas	5	0	4	9	149	274
East Texas Border	2	1	0	3	69	171
Gulf Coast Texas	21	5	0	26	510	573
Southwest Texas	40	5	1	46	867	1,343
Total Texas	216	16	33	265	5,043	5,649
North Louisiana	8	1	0	9	229	260
Gulf Coast Louisiana	3	4	0	7	194	192
Total Louisiana	11	5	0	16	423	452
Arkansas	11	0	1	12	107	54
Montana	2	0	3	5	31	57
Wyoming	4	0	2	6	69	40
Colorado	0	0	0	0	3	6
New Mexico	6	1	1	8	238	310
Utah	0	0	0	0	0	0
California	22	1	4	27	558	589
Total United States	413	45	80	538	11,030	11,792
Total previous week	390	24	102	516		
Difference	23	21	22	22		

Outstanding Fields--Highlights

(Week Ending May 28, 1938)

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
K.M.A.	8	100	20	17,837	430	17,712
Hastings	4	9	4	2,378	534	18,210
West Saxet	2	6	4	579	22	1,834
Saxet	3	6	0	0	601	30,236
Benavides	3	12	5	1,102	191	9,535
East Texas	41	83	43	2,363	25,176	362,869
Talco	0	6	3	756	634	23,975
Ector County	14	86	13	14,175	1,060	31,496
Winkler County	6	19	3	1,305	1,637	34,457
OKLAHOMA						
Dora	2	8	0	0	62	4,775
Oklahoma City	4	12	1	417	1,079	92,050
KANSAS						
Barton County	4	19	5	4,299	318	8,029
Ellis County	3	13	3	1,026	323	7,659
Rice County	4	19	0	0	1,156	23,664
Russell County	5	24	3	2,232	1,077	21,079
NEW MEXICO						
Lea County	12	93	6	1,301	1,731	82,350
LA-ARK-TEX						
Rodessa, Tex-La-Ark	5	20	5	2,095	981	81,710
Jennings, La.	0	14	0	0	102	19,685
Cotton Valley (deep)	1	28	0	0	53	10,615
Lisbon, La.	4	15	4	3,515	218	7,500
Schuler, Ark.	5	13	7	6,350	56	7,915
MICHIGAN						
Buckeye	3	17	2	550	404	25,416
ILLINOIS						
Central Illinois	29	166	21	4,196	542	33,210
CALIFORNIA						
Wilmington	6	26	9	19,627	473	95,250

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Southwest Texas District

By
F. L. SINGLETON

Laredo District Has a New Pool and Three in Prospect

CORPUS CHRISTI, Tex., May 30.—The opening of a new field in Duval County and the favorable showing of two other wildcats in the same county, kept the Laredo district in the limelight of Southwest Texas activities the past week.

H. J. Porter opened the Laredo district's second Pettus sand field with the completion of No. 1 Fitzsimmons which yielded an initial production of 108 bbls. of 47-gravity oil through a 5/32-inch choke, with tubing pressure 360 pounds and casing pressure 1,120 pounds. The well has been looked upon as a probable pool opener since a drill-stem test at 4,302-15 feet showed 450 feet of oil. The hole is bottomed at 4,303 feet and completion was made after 7-inch casing was cemented at 4,292 feet.

The well is in the J. Poitevent Survey 291, about 9 miles northwest of San Diego on the same trend as the Benavides field which was discovered last year and opened the first important Cockfield production in the Laredo district. It will be called the Fitzsimmons field and an early drilling campaign is anticipated, as the well was drilled on a comparatively small block and various companies and individuals hold close-in protection. Leasing has been very brisk since the drill-stem test and several trades made last week call for early drilling obligations.

Pools in Prospect

Approximately 15 miles due south of the above strike, Rowan & Hope No. 1 Cuellar Brothers, B.B.B.&C. Survey No. 96, was looked upon as a possible pool opener following a drill-stem test at 5,100-36 feet, which showed 49 pounds of working pressure, 500 feet of oil and 120 feet of salt water. Pettus sand, having an odor of oil and gas, was logged at intervals from 5,116 to 5,136 feet. Preparations were being made to core deeper before running casing for a production test.

The discovery of Fitzsimmons and the showing of the above test indicate that other structures of this type may be developed along this trend which will intensify wildcatting throughout the Laredo area.

In the shallow Laredo-Pettus trend, 2 miles northwest of the town of Freer, and 1 mile southeast of the Charamousca field, Magnolia Petroleum Co. No. 1 Duval County Ranch Co., section 291, is shut down at a total depth of 1,190 feet after a 20-minute drill-stem test at 1,185-90 feet showed 110 feet of oil and a good blow of gas. A previous test at 1,181-84 feet showed a slight blow of gas and 30 feet of drilling mud. Sand was logged at 1,181-90 feet. The sand section is believed to be Cole sand.

North of the Barbacoas field, Starr County, Henshaw & Davis No. 1 M. M. Garcia has been officially completed for an initial production of 66 bbls. of 27-gravity oil per day through a quarter-inch choke with tubing pressure 225 pounds and working pressure 450 pounds. The well continues to make about 20 per cent salt water. Drilling has been started by the same operators on No. 1 Garcia.

In the same county and located in Porcion 83, Sioux Oil Co. No. 7 Ricaby cored oil sand at 1,396-1,403 feet and on a five-minute drill-stem test at 1,393-1,403 feet it tested 150 feet of gas-cut drilling mud and 390 pounds of working pressure. Seven-inch casing was cemented at 1,393 feet for a completion test.

South Alice Field

The South Alice field, Jim Wells County, received its second oil producer from the discovery horizon, and another test 4,300 feet northwest of production showed favorable results on a drill-stem test. H. H. Howell No. 3 Reed and Lindsay, a west offset to the discovery well, perforated casing at 5,288-5,312 feet and the well flowed 6 bbls. per hour through a one-eighth inch choke with 1,060 pounds of casing pressure and 805 pounds on the tubing. Conroe Drilling Co. No. 1 Reed and Lindsay, 4,300 feet northwest of the discovery logged gas sand at 5,241-53 feet, sand with an odor of oil 5,253-58 feet. On a six-minute drill-stem test at 5,253-67 feet, it tested 350 pounds of working pressure and 25 feet of oil-cut mud. It is coring deeper before running casing. Although no gauge has been received, George Coates No. 1 Lindsay and Reed, 440 feet northwest of production, is reported to be showing for a good producer as it flows into the pits. The hole is bottomed at 5,315 feet and the well is flowing from perforations at 5,248-58 feet. Offsetting the discovery to the east, Walter Goldston No. 1 Reed and Lindsay has been completed for a wet gasser from a new sand at 5,150-55 feet. The well has been shut in and has a tubing pressure of 1,900 pounds and casing pressure 2,100 pounds. Salt water was tested in the discovery horizon which discouraged further drilling in this direction.

Approximately 5 miles east of the field, Humble Oil & Refining Co. No. 1 Tarrant, an interesting wildcat in Share 5-B, La Anima Sola grant is drilling ahead below 4,700 feet. Broken sections of sand and shale showing oil and gas have been logged at intervals from 3,600 to 4,100 feet, and several drill-stem tests have been made, but none have showed good results.

New Sand in Saxet

A new sand discovery, which is expected to revive interest in the West Saxet field, Nueces County, was being tested by Renwar Oil Corp. at No. 2-B Kenedy. Gas and distillate sands were logged at 6,430-35 feet and oil sand at 6,435-45 feet. On a 17-minute drill-stem test at 6,435-45 feet, 650 feet of oil was recovered. Sand was also logged at 6,430-56 feet, but the company was unable to make a successful test of the section. Seven-inch casing was being run for a production test. The well is located in Survey No. 422.

In the East White Point field, San Patricio County, Plymouth Oil Co. added the field's seventh producer with the completion of No. 1-B Kate Cole which flowed 176.69 bbls. of oil through a one-eighth inch choke with 975 pounds tubing pressure and 1,100 pounds of casing pressure. The hole is bottomed at 5,663 feet and production was obtained by perforating casing at 5,659 feet.

Oil in a Gas Field

The White Point gas field received its first oil producer when J. K. Culton completed No. 1 White Point Development Co. for an initial production of 50 bbls. of oil per day through a one-eighth inch choke. The well is producing through perforated casing at 4,925-35 feet. In the East Plymouth field, Humble Oil & Refining Co. No. 2 Smith and Tolbert, 330 feet north of its discovery gas well, cored sand with an oil odor at 5,749-59 feet and on a 15-minute drill-stem test at 5,749-59 feet, it tested 14 pounds of pressure, 450 feet of oily mud and 2,450 feet of salt water. It is coring ahead below 5,800 feet.

Coastline Oil Co. No. 1 State, 2 miles southeast of Aransas Pass in Redfish Bay, is coring ahead below 8,250 feet. The well is scheduled to be drilled to 8,500 feet at which depth a second Schlumberger survey will be made. Sand with an oil show has been logged at 7,338-56 feet.

In the Balcones Fault Line district, Humble Oil & Refining Co. No. 1 Heilsman was being watched with interest after topping the Edwards lime at 6,713 feet and coring to a total depth of 6,719 feet. A short core was scheduled to be taken and a Schlumberger survey made of the hole. A showing of oil was logged in the Buda lime section at 6,364-68 feet which will be tested if the Edwards section fails to produce. Location is in the J. Cunningham Survey.

Paul Teas No. 1 McKnight, a wildcat in Dimmitt County, sidetracked and redrilled the hole to a total depth of 2,465 feet and 5½-inch casing was cemented at 2,447 feet. The hole was swabbed four times and the well started flowing wash water and gas and the pressure built up to 750 pounds. Several weeks ago, the well blew out from the same section and it is very likely that the well will make only a gas well.

In Milam County, Texedo Oil Co. No. 1 Graham, 7½ miles south of Buckholts, Charles Cronea Survey, is coring in the Edwards lime at 1,809 feet. A slight oil show was logged in the Georgetown section at 1,805-08 feet. Previous showings have been logged at 1,135-36 feet.

COMPLETED WELLS

Completed wells in proven Southwest Texas field with their total depth and initial 24-hour production of the producing wells were as follows:

Bexar County

Von Ormy field: Nuswald Oil & Gas Co. No. 8 Trawalter, 6,020 feet, 4 bbls. pumping. Nuswald Oil & Gas Co. No. 12 Trawalter, sand 535-601 feet, 3½ bbls. pumping. Nuswald Oil & Gas Co. No. 13 Trawalter, 617 feet, 4½ bbls. pumping.

Brooks County

Alta Mesa field: Standard Oil Co. of Texas No. 3 Garcia, perforated casing 2,510-46 feet, 402 bbls. pumping.

Duval County

Benavides field: Arkansas Fuel Oil Co. No. 3 Wolfe, sand 5,353-58 feet, 47 bbls., three hours, quarter-inch choke. Benedum & Trees No. 14 Puig, 5,843 feet, abandoned. Humble Oil & Refining Co. No. 4-B Rossi, 5,359 feet, 186 bbls., quarter-inch choke. Glenn H. McCarthy No. 2 Snyder, perforated casing 3,941-49 feet, 70 bbls., six hours, quarter-inch choke. Navarro Oil Co. No. 2-A Rossi, 5,349 feet, 146 bbls., three-sixteenths inch choke. Republic Production Co. No. 7-A Buoy, sand 3,890-95 feet, 26 bbls., quarter-inch choke.

Hoffman field: Gulf Stream Oil Co. No. 4-Q Hoffman, sand 2,706-13 feet, 40 bbls. per day, 80 per cent salt water, jetting. Gulf Stream Oil Co. No. 9-Q Hoffman, 2,700 feet, abandoned. Magnolia Petroleum Co. No. 1-A Well, 2,691 feet, 20 bbls. per hour, one-half inch choke.

Lundell field: Government Wells Oil Co. No. 24 Lundell, sand 1,507-13 feet, 8 bbls. per hour, quarter-inch choke.

Piedra De Lumbre field: Magnolia Petroleum Co. No. 4 Duval County Ranch Co., sand 1,954-60 feet, 21 bbls. pumping.

Seven Sisters field: A. J. Brinkoeter, 1,524 feet, abandoned. A. J. Brinkoeter No. 7-B Garza, sand 1,487-93 feet, 7 bbls. per hour, quarter-inch choke. Coffield and Lanning No. 3 Garza, sand 2,625-36 feet, 60 bbls. pumping. Reynosa Oil Co. No. 2-B Welder, sand 2,643-53 feet, 12 bbls. per hour, quarter-inch choke. Reynosa Oil Co. No. 3-B Welder, 2,661 feet, abandoned.

Hidalgo County

Mercedes field: Union Sulphur Co. No. 13 American Rio Grande, sand 7,506-13 feet, 115 bbls., three-eighths inch choke.

Karnes County

South Burnell field: Dirks Brothers No. 2 Choate, 3,673 feet, 128 bbls., three-sixteenths inch choke.

Live Oak County

Ezzell field: C. G. Glasscock No. 1 Nueces River Bed, 1,451 feet, 30 bbls. pumping. Lomo Novia Oil Co. No. 1 Nueces River Bed, 1,460 feet, 5 bbls., pumping.

(Continued on Page 114)

Results

From the time a Baker Cement Wash-Down Whirler Shoe is started down the hole, until the plug and valve have been drilled up and circulated out of the well, every desirable result has been accomplished!

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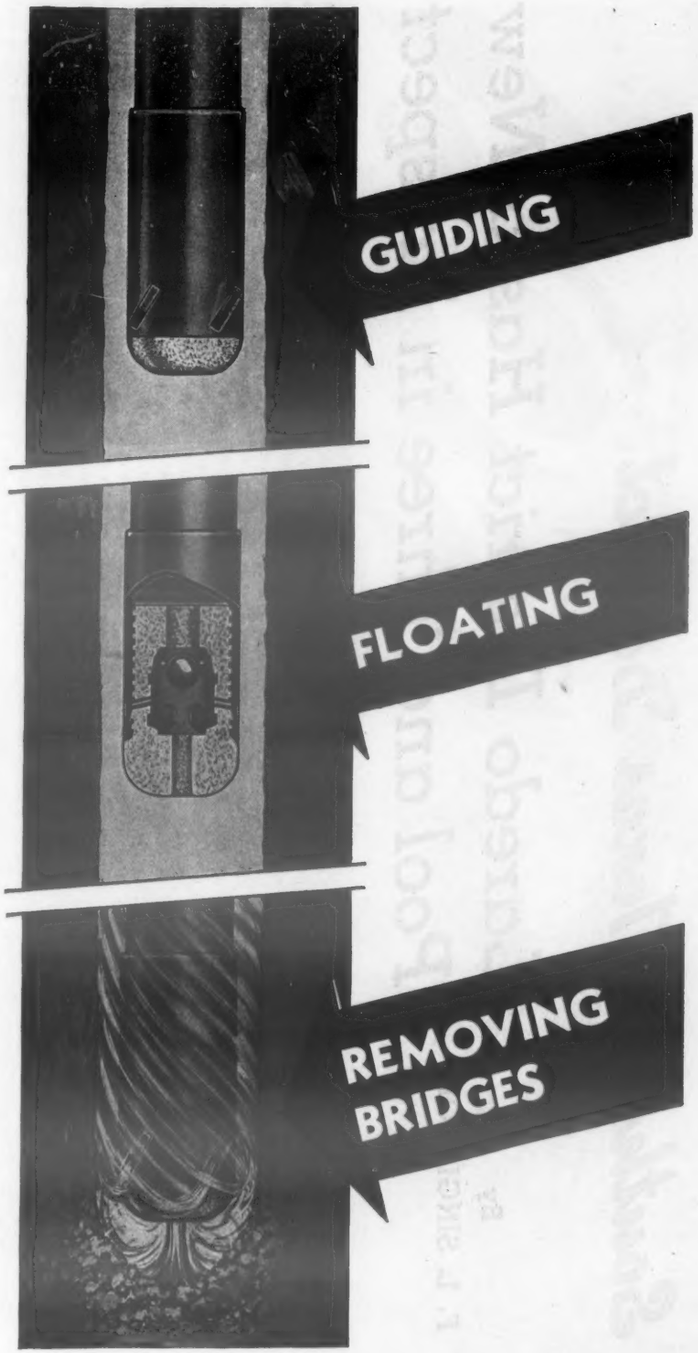
BETTER CEMENTING is accomplished by the definite DOWNWARD as well as the UPWARD whirling action imparted to the cement in its travel around the shoe and up and around the casing . . . this action insures best possible encasement of the pipe with a uniform body of cement.



West, Central and Panhandle Texas

Seminole Extended 4 Miles; Avoca Gets 4,440-Bbl. Well

By MITCHELL TUCKER

FORT WORTH, Tex., May 30.—Heading several other important extensions to producing fields in West Texas last week was the 4-mile extension given the Seminole field of central Gaines County. The J. L. Frick and Osage Drilling Co. No. 1 Atlantic-Riley, section 249, Block G, W.T. Survey, 4 miles northeast of production at Seminole, began flowing at the rate of 10 bbls. hourly following first stage acid treatment. Broken showings of oil saturation were logged from 5,068 to 5,098 feet, and tubing is set at 5,093 feet. This well is on the same geophysical high mapped as the Seminole structure.

An important well which further links the presently proven 30,000-acre Wasson field of Gaines and Yoakum counties is being completed as a producer as the week closed. Blackstock Oil Co. No. 1 Wasson, section 59, Block AX, P.S.L. Survey, 1 mile northeast of Wasson production, and a quarter mile southwest of the cluster of wells linking the Denver and Wasson areas, is now bottomed at 4,977 feet. Gas and showings of oil have been logged from 4,660 to total depth, and the pressure was sufficient at 4,613 feet to threaten a blowout. Tubing is being run for production tests.

In southwestern Yoakum County, Shell Petroleum Corp. is preparing to drill the second well in its newly opened producing spot 4 miles west of the Denver area. Location is to be a quarter mile due north of the discovery, No. 1 Dora Roberts, which was completed for an initial production of 566 bbls. Location is in section 793, Block D, John H. Gibson Survey.

Magnolia Petroleum Co. No. 1 Webb, section 477, same block and survey, about 2 miles southwest of Plains, is swabbing and testing at its plugged-back depth of 5,380 feet. After a two-stage acid treatment, swabbing recovered a fluid showing 20 per cent basic sediment and acid residue, with a heavy black live oil. The outcome of this deep exploratory test remains uncertain, as testing continues.

Extension or New Pool

Texas Co. No. 1 Mallett Land & Cattle Co., section 7, Block G, P.S.L. Survey in Cochran County, is proving itself an oil well, and either a new field opener or a connecting link between the Duggan pool in southeastern Cochran County and the Slaughter field in southwestern Hockley County. After a two-stage acid treatment at the plugged back depth of 5,058 feet, the well is producing 7 bbls. of oil hourly by swabbing. Further production tests will be made in an effort to bring the well onto natural flow.

In western Cochran County, Helmerich & Payne No. 1 Westheimer & Daube, wildcat on Stonewall County School lands, is nearing its contract depth of 5,200 feet without having encountered attractive showings of oil or gas.

CENTRAL AND SOUTH BASIN AREA

As a 5-mile outpost from the Goldsmith field in northern Ector County, the R. R. Rhodes and J. D. Tompkins No. 1 Emma Cowden in southwestern Andrews County, continues to look attractive. At the present total depth of 2,925 feet operations are shut down while the crew is reconditioning mud in a heavy gas zone encountered in the Yates sand. This well is checking over 100 feet higher on the Yates than the Sinclair Prairie Oil Co. No. 2 Emma Cowden, about 1¼ miles southeast, which logged strong showings of oil but was abandoned. Several seismograph surveys indicate a continuation of the Goldsmith structure into Andrews County.

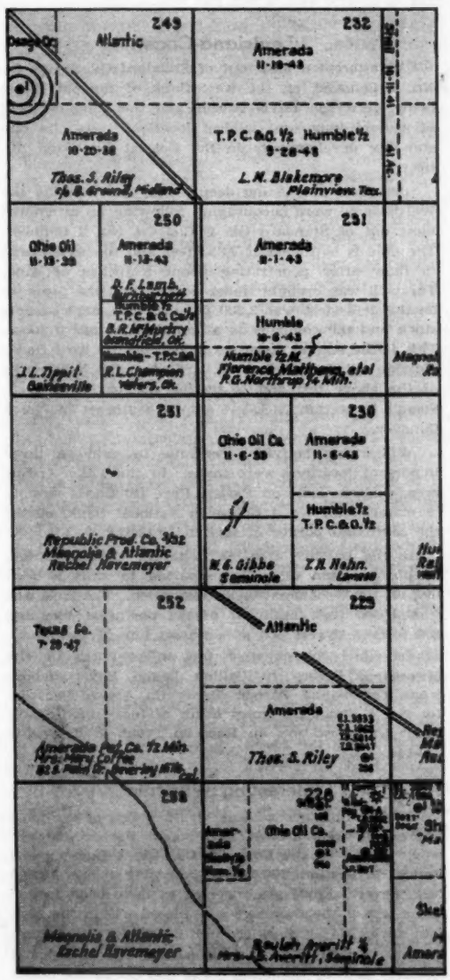
A 1¼-mile northward extension was provided the Bashara field of Winkler County last week, when Gelder No. 1 Kessler Brothers topped the pay at 3,083 feet, and set casing to test.

Magnolia Petroleum Co. has made another wildcat location 1½ miles southeast of their recent discovery well in northeastern Crane County. The new test will be known as No. 1-15 University, section 15, Block 30, University lands, situated 2 miles due north of production in the Church-Fields pool.

Attention returned quickly to Magnolia Petroleum Co. and Tex-Mex No. 1-A McKee, deep Ellenburger test in the Imperial area of north Pecos County last week. A small amount of oil and gas was reported showing in the drilling fluid while bailing at 5,670 feet. Total depth is 6,165 feet, 63 feet into the Ellenburger section of Lower Ordovician.

WEST CENTRAL TEXAS

Gauged flows rating 100 bbls. hourly on the second well of southern Haskell County's new Canyon lime pool, Forest Development Corp. No. 2 A. E. Pardue, indicated the opening of a flush producing area possibly equal to that of the Jones County Avoca pool.



Southwest Mapping Co., Fort Worth

Four-mile northwestern extension given the Seminole field of central Gaines County, J. L. Frick and Osage Drilling Co. No. 1 Atlantic-Riley, is flowing 10 bbls. hourly on initial tests after first stage acid treatment

Quarter mile north of the discovery well, No. 2 Pardue drilled into Adams Branch pay with spudder at 2,805-16 feet, and gauged increasing flows through casing during completion up to 60 bbls. per hour. When tubing was run after a shut-in, the well was turned into tanks for brief flows rating as high as 30 bbls. in 15 minutes. It was scheduled for a railroad commission potential test.

Definite staking of new locations has not been announced, but at least four or five wells are due to begin within the next two weeks.

No. 2 Pardue is 2,100 feet from the north, 550 feet from the west lines of M. Collum Survey No. 4, 10 miles south of Haskell.

Eight miles to the east, Fain-McGaha Oil Corp. and P. S. Kendrick No. 1 T. G. Hendrick attempted to plug back 2 feet to shut off bottom-hole water after showing as a producer from pure sand at 2,682-84 feet, corrected, and entering water at 2,686 feet. It had bailed free oil through 1,200 feet of water to indicate a possible 40 to 50 bbls. daily. Location is in Indianola Railway Survey No. 104.

Forest Development and Helmerich & Payne No. 1 Hendrick, in the northwest corner of Shackelford County, drilled below 4,000 feet on an Ellenburger lime project.

Drills Into Water

Abandonment of Ungren & Frazier and others No. 1 McKeever, a mile-north outpost to the deep lime pool of Shackelford County, was planned after it had tested two lower Palo Pinto oil showings at 3,253-55 and at 3,265-70 feet, but drilled into water at 3,272 feet, total depth. The hole will remain in condition, however, for possible plugging back if the Ivy pool's nearest outpost, J. G. Hammond, Inc., No. 1 Mansker, quarter mile south, has favorable indications.

Iron Mountain Oil Co. gave a one-location southeast extension to the Jones County Avoca pool when its No. 1 C. J. Peterson rated a 4,440-bbls. daily potential by flowing 1,194 bbls. of oil in six and one-half hours. It is in section 195, B.B.B.&C. Survey.

Dunigan Brothers and Fred Hyer of Fort Worth, who took over contract of the Stanton & Miller No. 1 J. J. Gaither, 4 miles north of Anson in Jones County, tested a 10-bbl. showing of oil in Cook sand at 2,442-47 feet, but drilled ahead. Location is in section 38, B.B.B. &C. Survey, 5 miles northeast of the recent Chittenden discovery well.

Brown Eagle Oil Co. and Kleiner No. 1 Sullivan Heirs, 3 miles east of Hawley, cemented 6-inch casing at 2,190 feet to acidize and test a showing of oil in Gunsight lime at 2,200-03 feet, with a bottom of 2,223 feet, in dry lime.

Robert Oil Corp. of Breckenridge deepened No. 1 W. D. Swann on the west flank of the old Noodle Creek field and was testing a natural showing in Fisher County lime at 2,805-11 feet, with pipe set at 2,992 feet, and considered acid treatment.

PANHANDLE AREA

Fourteen new producers were completed in the Panhandle area last week, 11 for oil and 3 for gas. The oil wells tested a potential of 4,835 bbls. daily and the gas wells 33,922,000 feet.

Eight new locations were announced in the area last week, one in Donley County, two in Carson, and five in Hutchinson County.

WEST CENTRAL TEXAS COMPLETIONS

Shackelford County

J. C. Hamer No. 1 P. S. Fincher, abandoned dry at 1,405 feet, total depth. Owens-Snebold Oil Corp.

(Continued on Page 108)

Texas and Louisiana Gulf

By
NEIL WILLIAMS

Third Pay in Segno Yields Good Well; High Grade Oil

HOUSTON, Tex., May 30.—Deeper exploration on the Conroe Trend was emphasized once again with the opening of a third sand in the Segno field in Polk County. The discovery was made by Gulf Oil Corp. with the completion of No. 2 Ragan which flowed 623 bbls. of 34-gravity oil per day through a quarter-inch choke, with tubing and casing pressure equalized at 1,200 pounds. The hole was drilled to a total depth of 9,154 feet, and the completion was made through perforated casing at 8,163-68 feet.

The well is in the south part of the field in the I.&G.N. Survey No. 15. The main horizon is the upper Cockfield sand which produces from 5,100-5,300 feet, while one well is producing from a deeper sand at 6,260 feet. The significant feature is that the sand section is a member of the Wilcox series which produces at Spurger in Tyler County and at Villa Platte in Evangeline Parish, Coastal Louisiana. The discovery encourages deeper drilling in other proven fields along the trend and will have much bearing on future wildcatting. This Wilcox has no relationship to the Wilcox sand of Oklahoma.

Humble Oil & Refining Co. extended production in Galveston Bay about 1,800 feet with the completion of No. 2-95 State which flowed 26 bbls. per hour through a quarter-inch choke from a screen setting at 5,988-98 feet, the total depth. The same company made a location for No. 3-95 State.

In the Seabreeze field, Chambers County, Sun Oil Co. is testing No. 2 Seabreeze Land Co. which is expected to extend the field about 1,500 feet east. The hole was plugged back from 8,854 to 8,825 feet and the casing perforated at 8,810-24 feet. The hole is being swabbed and the well is showing wash water and oil.

Eureka Field

In the Eureka field, Harris County, Jack Frazier No. 2 Vollmer-Neiman flowed 594 bbls. per day through a quarter-inch choke from perforated casing at 7,717-32 feet. Alamo Drilling Co. No. 3 Laura Lackner, H. Reinerman Survey, topped oil sand at 7,697-7,730 feet and is running casing after coring to a total depth of 7,745 feet. Houston Oil Co. No. 2 Helberg and Lackner is perforating casing to complete. The hole is bottomed at 7,753 feet with oil sand logged at 7,691-7,717 feet.

In the Hitchcock field, Galveston County, N. W. Hunter completed No. 3 Maco Stewart for an initial production of 279 bbls. per day through a three-sixteenths inch choke. The well is producing through perforated casing at 5,131-45 feet. The same operator made locations for two wells on the A. Cohen lease, west of the producer, while Maco Stewart has spudded his No. 2 fee 600 feet due east of No. 3 fee.

New Wells in Fairbanks

Four producers were completed in the Fairbanks field and locations for six wells were made. Producers were added by H. Adams, Amerada Petroleum Corp. and Stanolind Oil & Gas Co. and E. L. Smith and Ownby Drilling Co.

Amerada and Stanolind Oil & Gas Co. made location for No. 1 F. W. Farnsworth, J. Clarkson Survey No. 1. Niteland Investment Co. made a location on the J. M. Demant Survey. Smith and Ownby Drilling Co. made a location for No. 1 Gibson, George Ayers Survey. H. E. Williams and Thompson are starting No. 1 Sterns in the G. Williams Survey. Housh & Thompson have derrick up for No. 1 B. Arriola in the same survey.

The west side of the Hardin field, Liberty County, was extended slightly with the completion of Sun Oil Co. No. 2 Hissey. Casing was perforated at 7,608-25 feet and the well flowed 157 bbls. of pipe line oil in 12 hours through a quarter-inch choke.

South of the Spurger field, Tyler County, Glenn H. McCarthy is reaching an interesting depth in No. 1 McShane, B.B.B.&C. Survey. It is drilling below 7,010 feet. The Cockfield was topped at 5,393 feet, Discorbis Yeguaenses at 5,614 feet and the Eponides Yeguaensis at 5,768 feet.

In the Fresno area, Brazoria County, Sam E. Wilson Jr. is preparing to start drilling operations on an 8,500-foot wildcat on the Dorthy Sorells lease in the Charles Heywood Survey. The well is located in the center of tract 692 south of a large block held by Humble Oil & Refining Co.

In the Clear Lake area, Harris County, West Production Co. made location for a third test. It is No. 1 Dobie fee, 600 feet from the south line and 3,000 feet from the east line of the William Dobie Survey. The company recently abandoned No. 1-A at a reported depth of 7,210 feet. The well is 2,350 feet due east of the discovery well, a wet gas well.

Louisiana Coast

An attempted blow out of Standard Oil & Gas Co. No. 2 Conover, on the west flank of the old Welsh dome, Jefferson Davis Parish, and the announcement of several important wildcat locations were the outstanding developments in the Coastal Louisiana district.

Prospects of opening deep production flanking the Welsh dome were encouraging following an attempted blow out of Standard Oil & Gas Co. No. 2 Conover. The hole is bottomed at 7,353 feet and the well began to blow after penetrating about 8 inches of sand. The well was brought under control and the pressure on the drill stem was 2,200 pounds. The stem became stuck and the company is attempting to pull it loose. This is the second deep test drilled on the west flank. Humble Oil & Refining Co. drilled a dry hole north of the above test and is rigging up for No. 1 T. S. Stegall in section 29-9s-5w, a mile southeast of No. 2 Conover.

Wildcatting activities continue to gain as three important locations were made. In the Lake Arthur area, eastern Cameron Parish, Pure Oil Co. is moving in material for No. 1 Calcasieu National Bank, out of the southwest corner of section 18-12s-4w.

In the LaPlace area, St. John the Baptist Parish, Shell Petroleum Corp. is preparing to start a deep test on the Godchaux Sugar Plantation. The well was staked 400 feet southwest of the northeast line and 150 feet northwest of the southeast line of section 97-11s-7e which places it a few miles north of the Mississippi River. In Calliou Island Bay, offshore from Terrebonne Parish, Texas Co. staked location for No. 1 State, 2½ miles north of the United States Coast Guard station on Raccoon Point in Township 23s-14e.

Interesting Wildcats

Of the numerous wildcats drilling, two of the most interesting tests are in Terrebonne Parish and are being drilled by the Fohs Oil Co. No. 1 Buckley and Bourg, in section 77-19s-17e, is coring below 13,215 feet. Several sands are reported to have been logged and a test of the showings is expected within the next few days. No. 1 Buckley and Bourg is the deepest test ever drilled in Coastal Louisiana. The record was formerly held by Stanolind Oil & Gas Co. in the South Elton field which reached 12,210 feet. Three miles southeast of the Lirette field, Fohs Oil Co. No. 1 State is drilling in shale below 12,260 feet.

In the Abbeville field, Vermilion Parish, Continental Oil Co. extended production about a half mile north and opened a new sand for the structure as No. 1 Motty, section 67-12s-13e, flowed 388 bbls. in 18 hours through a three-sixteenths inch choke. The casing was perforated at 6,424-28 feet.

In the Bateman Lake field, St. Mary Parish, Texas Co. is driving piling for No. 1 Was Bayou, in section 21-16s-12e. This is the first test on the structure since the completion of the discovery well completed last year in a 10,000-foot horizon.

Dry Hole in Baton Rouge Area

William Helis abandoned No. 3 Louisiana State University land in the Baton Rouge field, East Baton Rouge Parish. The hole was quit at a total depth of 7,350 feet and locations were made by the same operator for No. 2 Duplantier in section 65-7s-1w and for No. 1 Harry Brown in section 36-7s-1w. Derricks are up for both wells.

Two more 10,000-foot producers for the Lafitte field, Jefferson Parish, were assured. Texas Co. No. 10 Lafitte, section 17-17s-24e, is bottomed in sand at 10,191 feet and 7⅝-inch casing was cemented on bottom. No. 1-B Madison, section 19-17s-24e, is coring in oil sand at 10,064 feet and will run casing for completion during the week.

In the Quarantine Bay field, Plaquemines Parish, Gulf Oil Corp. logged oil showings in a deeper horizon in No. 4 State. The sand was logged at 9,228-36 feet and at 9,617-18 feet. It is coring ahead below 9,623 feet. The producing horizon in the discovery well is below 8,100 feet.

Pan American Production opened a shallow sand on the old Sorrento dome, Ascension Parish, with the completion of No. 10 United Land Co., section 15-10s-4e. Sand was topped at 879 feet and cored to a total depth of 901 feet. Seven-inch casing was cemented at 876 feet and the well was completed for an initial production of 175 bbls. per day through a 7/32-inch choke.

On the Venice dome, Plaquemines Parish, Tidewater Associated Oil Co. is completing No. 7 Manhattan Land & Fruit Co. The hole is bottomed at 7,205 feet and 7-inch casing was cemented at 7,176 feet. Oil sand was logged at intervals from 7,128 feet to the total depth.

In the Woodlawn area, Jefferson Davis Parish, Union Sulphur Co.'s first attempt to test the 8,100-foot horizon in No. 2 Calcasieu National Bank, showed salt water and the perforations have been squeezed off preparatory to plugging back a few feet and retesting. The well flowed pipe line oil from 8,900 feet, but the section had to be given up due to salt water intrusion.

In the Villa Platte field, Evangeline Parish, Continental Oil Co. is preparing to complete No. 1 Martha Haas, in section 44-3s-2e. The hole is bottomed at 9,098 feet and casing has been cemented on bottom. The completion will extend the field about a half mile. No. 1 Hattie Haas is coring below 9,036 feet, while No. 1 T. E. Vidrine is drilling in shale below 10,157 feet.

COMPLETIONS ON TEXAS COAST

Brazoria County

Danbury field: H. E. Williams No. 1 Blakely Winston, 2,115 feet, abandoned. Hastings field: Humble Oil & Refining Co. No. 5 B. H. Alexander, sand 5,826-6,060 feet, 648 bbls., quarter-inch choke. Humble Oil & Refining Co. No. 6 Alexander, sand 5,794-6,080 feet, 585 bbls., quarter-inch choke. Stanolind Oil & Gas Co. No. 9-E Grote, perforated casing 5,240-65 feet, 621 bbls., quarter-inch choke; No. 1 Carrie B. Roberts, perforated casing 6,040-78 feet, 524 bbls., quarter-inch choke. Manvel field: Texas Co. No. 18-A Belcher, sand 5,611-75 feet, 555 bbls., quarter-inch choke.

(Continued on Page 107)

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Among Gulf Coast Drilling Contractors

Loffland Brothers have established a new drilling depth record for the Gulf Coast district by drilling Fohs Oil Co. No. 1 Buckley and Bourg, a wildcat in Terrebonne Parish, Coastal Louisiana, to a total depth of 12,215 feet. The well is coring ahead and its final depth is expected to surpass the depth of Stanolind Oil & Gas Co. No. 3 Calcasieu National Bank, at South Elton, Jefferson Davis Parish, recently drilled to a depth of 13,210 feet. Several sands are reported to have been logged in the well. The hole was drilled to its present depth without trouble. The last string of protection casing consisted of 7-inch and was cemented at 11,684 feet. For the same company and located in the same parish, No. 1 State is drilling below 12,260 feet and is also expected to touch the 13,000-foot horizon.

Harry L. Edwards Drilling Co. is completing two wells for the Woodley Petroleum Co. in the Hardin field, Liberty County, and contracts for additional wells have been received. One rig has been moved to the Dickinson field for the Mid-State Oil Co., while another outfit is operating in the same field for the Kenben Oil Co. In the East Telferner field No. 3 D. L. Robertson is coring below 4,800 feet.

Cron & Gracey received contract from Shell Petroleum Corp. for a deep test in the Gibson field, Terrebonne Parish. In Coastal Louisiana, drilling operations are reported for Fohs Oil Co. at the Lake Long field, Lafourche Parish, for the Amerada Petroleum Corp. at Villa Platte in Evangeline Parish. Along the Texas Coast, one rotary is running for Shell Petroleum Corp. at the McFaddin field, one at the Hardin field for Fohs Oil Co., one at Tomball for Shell Petroleum Corp., one at Dickinson for Stanolind Oil & Gas Co., and one in the Markham field for Cron & Gracey.

Trinity Drillers of San Antonio received contract from Phillips Petroleum Corp. for No. 4 Henry Schmidt, in section 83 of George H. Paul subdivision, Colman Fulton Pasture Co. Coastline Oil Co. No. 1 State is drilling below 8,275 feet and is scheduled to be drilled to 8,500 feet. This is one of the most interesting wells drilling in the lower Gulf Coast district, being located about 2 miles from Aransas Pass in Redfish Bay.

O. W. Dyer is moving a rig to the Bay City field for Atlantic Refining Co. Other operations for the same company are reported at Hardin, Dickinson and East White Point fields.

Allen & Morris of San Antonio have cemented 5½-inch casing at 5,475 feet in No. 1-A Chittim, for the Wellington Oil Co. preparatory to testing. Humble Oil & Refining Co. No. 1 Kelsey Bass, a wildcat in Jim Hogg County, is drilling below 2,160 feet. I. J. Allen No. 1 Rooke, a wildcat in the Woodsboro area, Refugio County, is drilling below 2,160 feet, while in Hidalgo County Sal Viejo Oil Corp. and Continental Oil Co. No. 1 Garcia Land & Cattle Co. is drilling below 9,473 feet. In the proven fields of Southwest Texas, drilling operations are reported for Sinclair Prairie Oil Co. in Laguna Madre Bay, offsetting the Flour Bluff field, Nueces County, while in the Luby field three rotaries are running for the Seaboard Oil Corp.

Rowan & Hope have apparently opened a new field in Duval County by its No. 1 Cuellar Brothers. The well is located about 15 miles south of the recent discovery of H. J. Porter and the hole is being cored ahead after a drill-stem test in the Pettus sand at 5,100-36 feet showed 49 pounds of working pressure, 500 feet of pipe line oil and 120 feet of salt water. If completed for a commercial well, it will open the third Pettus sand field for the Laredo district and will intensify the already active wildcatting program throughout this trend.

Glenn H. McCarthy is drilling below 7,000 feet on his wildcat in Tyler County, which is located south of the Spurger field. The well is scheduled to be drilled on the Cook Mountain horizon which is expected around 8,000 feet. In the Katy area, Stanolind Oil & Gas Co. No. 1 Freeman, a projected 10,000-foot test, is drilling below 8,800 feet. Other operations are reported for himself at the Benavides, Amelia and Hardin fields.

There were 34 locations reported for the Texas Coast the past week, which is a decline of three from the previous week. The majority of the new work was reported for the active Fairbanks field which is gradually becoming the most active field in the district. Only one wildcat was staked. It is a scheduled 8,500-foot test for the Fresno area, Brazoria County, and will be drilled by Sam E. Wilson, Jr., on the Dorothy Sorells lease in the Charles Heywood Survey.

Union Sulphur Co. has obtained leases on approximately 5,000 acres located in the China area, Jefferson Davis Parish, and is expected to start drilling operations in the near future. The block was assembled several months ago and it has been worked extensively with geophysical instruments. The block centers in townships 7s-4w and 8s-4w.

Much interest was centered on Continental Oil Co. No. 1 Realty Operators located in the Hester area, near the Mississippi River in St. James Parish. Sand was logged at 6,480-96 feet and a 5-foot recovery of the section had a good odor of oil. Late in the week a Schlumberger survey was being made.

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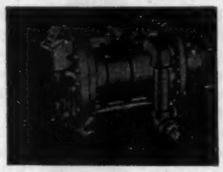

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Central West

By STAFF CORRESPONDENT

Centralia Gets Higher Runs But a 10-Cent Cut in Price

CENTRALIA, Ill., May 30.—Too much drilling in the Centralia field, resulting in too much potential production, had its effect in the past week.

The Owensboro Pipe Line Co. (Standard Oil Co. of Ohio) announced it would increase its pipe line runs to 40 bbls. per well in response to the continued requests for a large per well allowable, but that it would lower its price paid for crude 10 cents per barrel.

Therefore, on May 25, at 7 a.m., it began running about 6,000 bbls. per day at $1.25 per barrel instead of 3,200 bbls. a day at $1.35 per barrel.

In the week ending May 19 the Owensboro Pipe Line Co. ran an average of 3,241.88 bbls. per day in Centralia, all of which was purchased oil. At the same time the Illinois Pipe Line Co. (Ohio Oil Co. affiliate) ran 836.69 bbls. per day from Centralia properties, all of it purchased oil. The total runs for the week from the field averaged 4,078.57 bbls. per day. The potential production of the field was very largely in excess of this quantity.

Ever since the two pipe line companies prorated the field to a maximum of 20 bbls. per well, Centralians have been loud in their charges of discrimination. Why is Centralia treated differently than the Clay City, Noble and other deep sand pools, they asked, demanding at the same time that something be done to prorate all of the new crop of Illinois fields or give Centralia a higher allowable.

In the past eight weeks 128 oil wells have been completed in the Centralia field, yielding 23,178 bbls. in initial 24-hour production, or an average of 181 bbls. per well. The wells ranged all the way from 10 bbls. up to 480 bbls. in first-day output. Most of the wells had been given small shots of nitroglycerin.

Restricted pipe line facilities have kept the production of the field down to a relatively low figure. Of the total of 33,446 bbls. per day of pipe line runs credited to the central Illinois fields, in the week ending May 19, only 4,078.57 bbls. was run from the Centralia field. At the same time 29,000 bbls. was being run from the remaining fields of the state, the deep sand pools, producing from McClosky lime, enjoying an almost unrestricted output and disposing of their oil as produced.

Taking a 10-cent cut in order to sell more oil develops an interesting bit of economics. Producers were receiving $4,376.54 per day for 3,241.88 bbls of oil. They will receive $7,500 per day for 6,000 bbls. of oil under the new price, but will deplete their wells that much more quickly and in the end will realize less on their investment than they would have done had they kept their excess oil in the ground until such time when the pipe lines were able to take more, and finally all of it, at the higher price. Under the new price setup it is as if they were still receiving $1.35 per barrel for the 3,241 bbl. production, but about $1.13 per barrel for the additional 2,758 bbls. run.

Centralia Field Completions

Completions in the Centralia field in Clinton and Marion counties in the past week, with their Benoist sand records and estimated initial 24-hour production were as follows:

In Clinton County, Shell Petroleum Corp. No. 1 Lippert, SW SE NW section 1-1n-1w, sand at 1,324-61 feet, no shot, estimated 70 bbls.; Shell No. 1 Kreft, NE NE SE section 11-1n-1w, sand at 1,380-89 feet, with a showing of oil and water, McClosky sand at 1,579 feet, dry, St. Louis limestone at 1,638 feet, total depth 1,646 feet, dry and abandoned; Adams Oil & Gas Co. No. 3 Baker, SE cor. NE SW SE section 12-1n-1w, sand at 1,354-75 feet, shot with 10 quarts, 132 bbls.; Ryan & Hinds No. 1 Pittinger, section 12-1n-1w, sand at 1,360-86 feet, shot with 10 quarts, 50 bbls. of oil and 10 bbls. of water; Thompson & Self No. 2 Hauseman, SE NE NW NE section 12-1n-1w, sand at 1,361-78 feet, and shale to 1,780 feet, shot with 25 quarts in sand and shale, pumped 140 bbls.; Cunningham Brothers and others No. 1 Gun, NE cor. SW SE NE section 13-1n-1w, sand at 1,361-81 feet, shot with 10 quarts, pumped 163 bbls.; John Pugh Drilling Co. No. 1 Allen, NE cor. SW SE section 13-1n-1w, sand at 1,355-70 feet, pumped 305 bbls.; Fritzie Oil Co. No. 1 Coe, NW cor. NE NE section 24-1n-1w, sand at 1,367-87 feet, pumped 51 bbls. in five hours, estimated at 200 bbls. a day. In the Marion County side of the Centralia field Hawley and others No. 1 Becker, NE cor. SE NE section 18-1n-1e, sand at 1,350-85 feet, shot with 30 quarts, pumped 150 bbls.; C. E. Lange No. 1 Broker, E half NW NW SW section 18-1n-1e, sand at 1,348-85 feet, shot with 15 quarts, 450 bbls.; N. C. Moore No. 1 Stone, E half NW SE SW section 18-1n-1e, abandoned location; John Pugh Drilling Co. No. 1 Church, CNL S half SW NW section 18-1n-1e, sand at 1,356-80 feet and shale at 1,380-84 feet, sand shot with 15 quarts and shale with 3 quarts, 220 bbls.; Sparta Oil Co. No. 1 Raines, near C SW SE SW section 18-1n-1e, sand at 1,362-84 feet, no shot, 250 bbls.; L. J. Burch No. 1 Hediger, N half NW NW NW section 19-1n-1e, sand at 1,361-77 feet, no shot, 280 bbls.; Shirley Shepard No. 1 Correll, SE SW NW section 19-1n-1e, and Stanley and others No. 1 Spatabert in the same 10 acres were abandoned locations.

Outside Completions

In St. Clair County, Ohio Oil Co. No. 33 Dyroff, SE cor. NE section 28-1n-10w, had Trenton limestone at 460-475 feet, total depth, and made an initial production of 175 bbls.

In White County, P. D. Lynch (formerly reported Heldt and others) No. 1 Dagley, SW NE SW section 12-7s-9e, is an abandoned location.

In Jefferson County, Carter Oil Co. No. 1 Warner (formerly reported as No. 2 Inez Cobb), C W half SW SW section 10-1s-2e, had sand at 1,945-61 feet which was shot with 15 quarts, and the well flowed 329 bbls. of oil and 21 bbls. of water initially; Hauseman and others No. 1 Myers, N half NW NW SE section 7-1s-3e, topped Cypress at 2,175 feet and Benoist sand at 2,290 feet and was abandoned as dry at 2,306 feet.

In Clay County, John H. Myers No. 1 Bowles, C E half NW NE section 28-1n-7e, was drilled to 3,215 feet without a showing and was temporarily abandoned. No McClosky pay was reported.

In Richland County, American National Drilling Co. No. 1 Everson, NE NE SE section 23-3n-9e, found McClosky pay at 3,049-52 feet and acidized it with 3,000 gallons. It produced 20 bbls. of oil and 50 bbls. of salt water. Pure Oil Co. No. 1 Minnie Taylor, SE NE NE section 29-3n-9e, pay at 3,017-20 feet and 3,030-33 feet, acidized with 5,000 gallons it pumped 653 bbls. in 24 hours. Total depth was 3,080 feet.

In Clay County, Campbell and others No. 1 Henderson, C N half NE NE section 7-4n-7e, a wildcat, was an abandoned location.

In Fayette County, John Farrelly No. 1 Lilly, SE cor. SW SE section 16-8n-3e, deepened from 1,524 feet, found Benoist sand at 1,561-72 feet, was put on the pump and made 72 bbls. the first 24 hours. Carter Oil Co. No. 1 Durbin, NW SW SW section 21-8n-3e, had Benoist sand at 1,476-1,501 feet and a stray sand at 1,504-06 feet. It was shot with 20 quarts and pumped 150 bbls. initially. Sam Jarvis No. 1 Mize, NW cor. NE NE section 21-8n-3e, had Cypress at 1,503 feet, and Weiler sand at 1,573-1,645 feet, which was shot with 25 quarts. The well flowed by heads 147½ bbls. in 24 hours. It was given an allowable of 40 bbls. per day by the Owensboro Pipe Line Co. Sam Jarvis No. 1 Sinclair, E half NE NW NE section 29-8n-3e, was shot with 20 quarts in Benoist sand at 1,443-66 feet and flowed 240 bbls. in 24 hours.

38 New Operations

First reports of new and prospective operations numbered 38.

In Perry County, Amerada Petroleum Corp. made a location for No. 1 United Electric Coal Co., a wildcat, SE NE NE section 22-6s-2w.

In Washington County, Parshall & Graham were drilling at 762 feet in No. 1 Harmon, a wildcat, SE SW SW section 22-1s-1w.

In the Clinton County side of the Centralia field, Shell Petroleum Corp. No. 2 Hauseman, NW SW SE section 1-1n-1w, was drilling at 385 feet; George Anderson No. 1 Dr. Kissel, NE NE SE section 12-1n-1w, rigging up standard tools; W. C. McBride, Inc., No. 1 Allison, SW SE NE section 12-1n-1w, location (corrected); Shell Petroleum Corp. No. 1-B Allison, 1,030 feet from N and 1,172 feet from E lines of section 12-1n-1w, drilling at 375 feet; R. Blowers No. 5 Fairview Park, NW cor. NE section 13-1n-1w, spudded; Lehman No. 1 Bierman, SE NE NE section 24-1n-1w, rig. On the Marion side of the field, Joe Hassett No. 1 Hauseman, 1,240 feet from E and 400 feet from S lines of SW quarter section 6-1n-1e, is spudded; George B. Anderson No. 1 Gerron, SW SW SW section 7-1n-1e, rigging up rotary; Broddus and others No. 1 Redstock, NE cor. SW SW SW section 18-1n-1e, rig; Cypress Oil & Gas Co. No. 1 Stonecipher, near C SE SW section 18-1n-1e, rigging up rotary; Paul Doran No. 1 Koelling, SW cor. NE SW SW section 18-1n-1e, spudded; T. T. Eason No. 1 Holman, SW cor. SE NW SW section 18-1n-1e, rigging up rotary; J. Q. Gill No. 1 Louise Cross, near C NW SW SW section 18-1n-1e, drilling at 60 feet; Lane & Edwards No. 1 Rixman Lumber Co., NE cor. SW SW section 18-1n-1e, rigging up; J. W. Menhall & Co. No. 1 Illinois Central Railroad, SW cor. NE SW section 18-1n-1e, drilling at 1,000 feet; John Pugh Drilling Co. No. 1 Marshall, near C NW SE SW section 18-1n-1e, drilling at 1,240 feet; John Pugh Drilling Co. No. 1 Meltner, SW cor. NE NW SW section 18-1n-1e, rig; Sparta Oil Co. No. 1 Raines, SE cor. SW SE section 18-1n-1e, shut down at 641 feet; Bell Oil & Gas Co. No. 1 Astract, SW cor. NW NE NW section 19-1n-1e, rig, all of which make a total of 20 operations in the Centralia field as against 13 completions, indicating that the peak of operations in that townsite field is still in the future.

In Wabash County, Adams Corner Oil Co. was drilling at 790 feet on a location 1,000 feet from S and 750 feet from W lines of NW quarter section 18-1n-11w; J. D. Toomey Estate No. 9 Litherland, 1,120 feet from E and 1,400 feet from S lines of SW quarter section 5-1n-12w, rigging up machine; Ridge Farm Oil & Gas Co. No. 9 Price, 1,200 feet from N and 400 feet from W lines of NE quarter section 14-1n-12w, rigging up machine. The above locations are measured from Indiana principal meridian.

In Schuyler County, western Illinois, Fagersburg and others made a location in C SE NE NW section 27-2n-1w (measuring from the fourth meridian).

In Edgar County, A. M. Myers was rigging up machine for No. 1 Brinkerhoff, SE SE SE section 26-13n-13w (measuring from Indiana principal meridian).

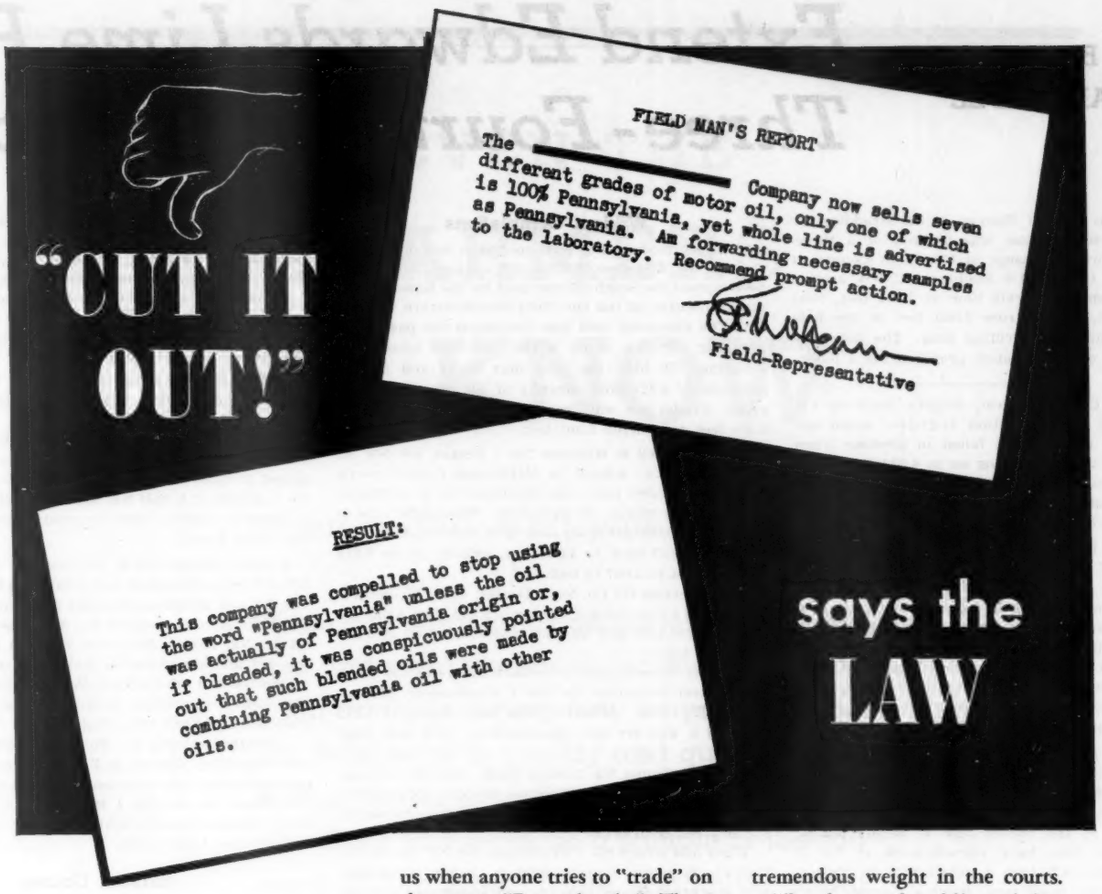
In Jefferson County, Carter Oil Co. made a location for No. 1 Hawkins (Alonzo Moore), NW NW NW section 15-1s-2e.

In Clay County, Pure Oil Co. made a location for No. 1 Bowles, C E half SW NW section 27-1n-7e.

In Marion County, C. A. Adams No. 1 Hawkins, a wildcat, C SW NE section 7-3n-1e, had tools moved in.

In Richland County, Pure Oil Co. No. 2 Wheeler, CSL NE NE NW section 17-3n-9e, was drilling at 1,117 feet. Mammoth Producing & Refining Co. No. 2 Brace, NW SW NW section 28-3n-9e, is a rig; Mammoth Producing & Refining Co. No. 1 Yount, NE NE NE section 29-3n-9e, a rig; J. V. Wicklund No. 1 Brace, SE NE NW section 32-3n-9e, location; Shamrock Oil & Gas Co. No. 1 Alvord, C SW SE NE section 33-3n-9e, a wildcat, cellar and pits dug; Ohio Oil Co. No. 4 Schilling, C S half NW SE section 32-4n-9e, drilling at 1,046 feet; Pure Oil Co.

(Continued on Page 106)


"CUT IT OUT!"
FIELD MAN'S REPORT
The [redacted] Company now sells seven different grades of motor oil, only one of which is 100% Pennsylvania, yet whole line is advertised as Pennsylvania. Am forwarding necessary samples to the laboratory. Recommend prompt action.
Field-Representative
RESULT:
This company was compelled to stop using the word "Pennsylvania" unless the oil was actually of Pennsylvania origin or, if blended, it was conspicuously pointed out that such blended oils were made by combining Pennsylvania oil with other oils.
says the LAW

WHEN ANYONE advertises and promotes a line of Pennsylvania Motor Oils, he'd better be absolutely sure every grade is *100% Pure Pennsylvania* or he'll meet the same opposition as this fellow did!

It's mighty serious business with us when anyone tries to "trade" on the name "Pennsylvania." Those who do have two strikes against them right at the start.

Our field men turn in samples to our laboratory in State College, Pennsylvania. There, under the eagle-eyes of our technologists, any fake blending is immediately detected. And, from past experience, we know that such evidence carries tremendous weight in the courts.

The force of public opinion stands behind us, too. Motorists know and appreciate the success we have had in keeping the good name "Pennsylvania" clean. Dealers and jobbers welcome the protection our Association gives. To them it means fair competition and honest profits!

Learn more about us. Talk to a field man or write headquarters.

PENNSYLVANIA GRADE CRUDE OIL ASSOCIATION, Oil City, Penna.

MEMBER OF PENNSYLVANIA GRADE CRUDE OIL ASSOCIATION
Guaranteed 100% PURE PENNSYLVANIA OIL
PERMIT NUMBER.....
Made from the highest grade crude oil in the world

Better Oils from the GROUND UP!

82% *Prefer Pennsylvania!*

An independent research organization in a nation-wide survey just completed, reports that, in answer to the question:

"Which type of motor oil is best?"

82% of the motor car owners answered:

"PENNSYLVANIA"

Kansas Developments

By
DAL DALRYMPLE

Extend Edwards Lime Pool Three-Fourths Mile North

The Edwards pool of Kansas, which straddles the Ellsworth-Rice county line, was assured of a three-fourths mile north extension in Ellsworth County at Continental Oil Co. No. 1-B Steinberg, C NW section 27-17-8w. It topped Arbuckle lime at 3,214 feet, total depth 3,232 feet, and oil rose 2,000 feet in the hole within 30 minutes after drilling plug. The hole was standing full of oil as operators prepared for a pumping test.

The Finney County wildcat, Atlantic Refining Co. No. 1 Nunn, SE SE NE section 27-21-34w, cored saturation in lime recently but failed to produce when plug was drilled in 7-inch casing set at 4,632 feet. Operators were drilling ahead below 4,664 feet, seeking the Vaniman pay zone productive in the Shallow Water pool, 9 miles northeastward in Scott County.

Several new Kansas wildcats were reported. Twin Drilling Co. had started work at No. 1 Koetkemeyer, SW cor. section 12-15-12w, about 3½ miles southeast of the new Green Vale pool in Russell County. A new outpost in Marion County was reported at Johnson and others No. 1 Miltz, SW cor. section 24-17-4e, 1 mile southeast of the Lost Springs pool. Operations were getting under way at Haun and others No. 1 Grauvenhorst, SE cor. section 7-6-16w, some 7 miles east of the Faubion pool in northern Rooks County.

A new Lane County wildcat was reported at Marshall, Valerius and others No. 1 Schierecks, C SE section 8-18-30w, near Amy. L. E. Douglass was drilling ahead at No. 1 Durand, SE SW section 3-23-5w, wildcat 4½ miles southwest of the Buhler pool in Reno County. Kessler & Thier, Inc., have started work at No. 1 Dirks, NE section 14-20-16w, 1 mile north of production in the Pawnee Rock pool, Pawnee County. Heilman & Harwood No. 1 Sawyer, SE NE NE section 10-28-7, is a new wildcat 1½ miles northeast of the Brandt pool in Butler County. Location has been announced for a new Woodson County wildcat at W. C. Cohen No. 1 Pendlay, NW NW SW section 5-26-15, southwest of production in the Yates Center pool.

Wildcat Completions

The Stafford County pool opened at Stanolind Oil & Gas Co. No. 2 Siefkes, NE SE NE section 3-22-12w, has been named the South Sittner pool by the Kansas Steering Committee of the Oil Field Nomenclature Committee. The discovery well was completed the past week, pumping 371 bbls. of oil in the first four hours after acidizing, 370 bbls. the next four hours and making potential of 2,221 bbls. Gravity of the oil was 42.5 degrees. Production was from Arbuckle lime topped at 3,594 feet, total depth 3,601 feet.

Darrell-Aurell & Williams No. 1 Decker, SW SW SE section 12-21-2w, wildcat in McPherson County northwest of the Graber pool, was completed for an estimated 5,000,000 feet of gas. It topped the Mississippi lime at 2,970 feet, found Arbuckle lime at 3,557-61½ feet, total depth, plugged back to 2,980 feet, drilled out to 3,018 feet and shot at 3,007-16 feet.

Cities Service Oil Co. No. 1 Becker, CWL W half SW section 21-14-14w, Russell County wildcat, had Arbuckle lime at 3,249 feet and was dry and abandoned at 3,283 feet, total depth.

Another Russell County wildcat failure of the week was Central Petroleum Co. No. 1 Furthmeyer, SE cor. section 22-14-15w. Arbuckle lime was topped at 3,252 feet and it was dry and abandoned at 3,289 feet, total depth.

Ward McGinnis No. 1 State Bank, NW NE NE section 14-26-15, wildcat in Woodson County, topped Mississippi lime at 1,403 feet and was dry and abandoned at 1,465 feet, total depth.

Kilby and others No. 1 Skellenger, NE NE SE section 25-23-14, Woodson County wildcat, found Mississippi lime at 1,611 feet and was dry and abandoned at 1,650 feet, total depth. Ed V. Parsons No. 1 Central Life, SE NW NW section 29-26-14, location for a Woodson County wildcat, was abandoned.

Wildcat completions of the previous week:

Duwe & Farris and others No. 1 Hadley, SE NE SE section 12-11-18w, south of the Burnett pool in Ellis County, pumped 213 bbls. of oil the first four hours and made potential of 1,266 bbls. of 34.4-gravity oil. It was bottomed at 3,332 feet, producing from Arbuckle lime. This area was named the South Burnett pool.

Cardinal Oil Co. and others No. 1 Fischer, SW NW SW section 31-21-12w, opened the Fischer pool in Stafford County. It is near the center of a triangle formed by the Gates, Sittner and Drach pools. It was acidized, pumped 175 bbls. of oil the first four hours and made potential of 783 bbls. Top of Arbuckle lime was 3,641 feet, total depth 3,650 feet.

Deep Rock Oil Corp. No. 1 Drake, NW NW SE section 4-17-13w, Barton County wildcat, was dry and abandoned at 3,430 feet, total depth. Lario Oil & Gas Co. No. 1 Hulme, C E half NE NE section 21-20-12w, wildcat in Barton County, was dry and abandoned at 3,468 feet, total depth.

Western Kansas Oil & Refining Co. No. 1 Scheufler, NW NW SE section 5-21-11w, wildcat in Stafford County, was dry and abandoned at 3,515 feet, total depth. Indian Territory Illuminating Oil Co. and others No. 1 Smith, SE SE NE section 29-21-11w, Stafford County wildcat, was dry and abandoned at 3,477 feet, total depth.

McCole and others No. 1 Mathews, SW NW NW section 15-24-10w, wildcat in Reno County, was dry and abandoned at 4,084 feet, total depth.

Atlantic Refining Co. No. 1 Rice, NW NE NW section 11-28-15w, wildcat in Pratt County, failed to find production and was abandoned at 4,874 feet, total depth.

Colonial Oil Co. No. 1 Miles, SE NE NE section 30-30-4w, Sumner County wildcat, was dry and abandoned at 3,616 feet, total depth.

Stafford County

Seven wells were completed in the Zenith pool, Stafford County, the past week. Pure Oil Co. No. 3 Krey, NW SW SE section 14-24-11w, had Misener sand pay at 3,805-26 feet, total depth 3,836 feet, flowed 608 bbls. of oil the first four hours, 600 bbls. the next four hours and made potential of 3,599 bbls. of oil.

Sinclair Prairie Oil Co. No. 1 Krey, SW SW NE section 14-24-11w, topped Misener sand at 3,796 feet, had Viola lime at 3,812-19 feet, total depth, flowed 621 bbls. of oil in nine hours and was completed for potential of 2,083 bbls. of oil. Gas was estimated at 1,000,000 feet.

Stanolind Oil & Gas Co. No. 2 Mamie Volker B, SE SW SW section 14-24-11w, had sand at 3,815-23 feet, total depth 3,827 feet, flowed 327 bbls. of oil the first four hours and made potential of 1,716 bbls. of oil, through tubing.

Same company's No. 3 Mamie Volker B, SE SE SW section 14-24-11w, flowed 257 bbls. of oil the first four hours from Misener sand topped at 3,799 feet and was completed for potential of 1,544 bbls. of oil, through tubing. It was bottomed at 3,826 feet.

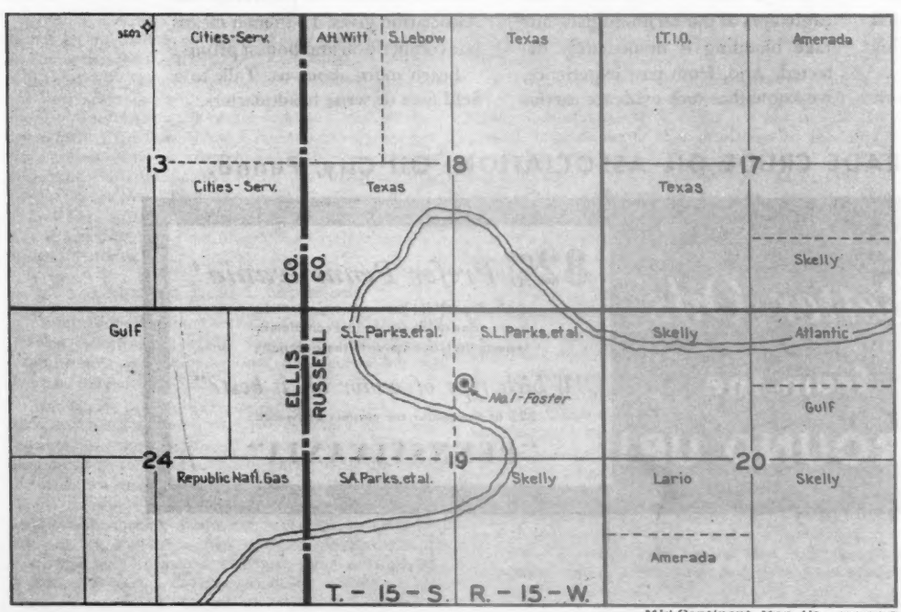
Stanolind Oil & Gas Co. and others No. 2 W. C. Volker, NW NW NE section 23-24-11w, found Misener sand at 3,805-28 feet, and had Viola lime at 3,828-30 feet, total depth. It flowed 373 bbls. of oil the first four hours from sand and made potential of 2,243 bbls.

Same operators' No. 4 Ferris B, NE NE NW section 23-24-11w, had Misener sand at 3,804 feet, total depth 3,819 feet, flowed 221 bbls. of oil in the first four hours and made potential of 1,335 bbls., through tubing.

Derby Oil Co. No. 5 McComb, SW NW NW section 24-24-11w, flowed 593 bbls. of oil the first four hours from Misener sand topped at 3,797 feet, flowed 610 bbls. the next four hours and made potential of 3,560 bbls. of oil. Total depth was 3,813 feet.

The following Stafford County wells were completed the previous week:

Torry & Feaster and others No. 1 Sittner, SW SE SW section 28-21-12w, total depth 3,634 feet, dry and



Mid-Continent Map Co., Wichita

A new producing area in southeastern Russell County was opened at S. L. Parks and others No. 1 Foster, section 19-15-15w

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When you want quick geophysical information, and want it without arousing curiosity, a soil analysis survey may be your answer. The field work is quickly and quietly done. A man walks over the property in several directions and picks up a sample of the soil every 1/10th mile. There is nothing about this to arouse the interest of farmers; yet if a client wishes to further reduce the curiosity element, he may instruct us regarding the most favorable time to make the survey.

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abandoned. Atlantic Refining Co. No. 1 Harris, NW cor. section 33-21-12w, dry and abandoned at 3,658 feet, total depth. Stanolind Oil & Gas Co. No. 1 Hayes, SW SW SE section 11-24-11w, total depth 3,790 feet, potential 1,150 bbls. of oil. Pure Oil Co. No. 2 Krey, NW NW SE section 14-24-11w, total depth 3,823 feet, potential 5,285 bbls. of oil. Stanolind Oil & Gas Co. No. 1 Volker B, NE SE SW section 14-24-11w, total depth 4,027 feet, potential 2,039 bbls. of oil. Same company's No. 2 Paulsen A, SE SE SW section 23-24-11w, total depth 3,822½ feet, potential 244 bbls. of oil. Parker Drilling Co. and others No. 1 McComb, SW SW NW section 24-24-11w, total depth 3,809 feet, potential 773 bbls. of oil. Stanolind Oil & Gas Co. and others No. 1 Paulson, NW SW NE section 26-24-11w, dry and abandoned at 4,020 feet, total depth.

New work in Stafford County: Stanolind Oil & Gas Co. No. 1 Fischer, NW SW SW section 31-21-12w, location; Sinclair Prairie Oil Co. No. 1 Bunselmeyer, SE NE SE section 36-21-13w, rig; Stanolind Oil & Gas Co. and others No. 5 Ferris B, NE NW NW section 23-24-11w, location.

Barton County

Helmerich & Payne No. 5 Stettinger, SE NW NE section 1-16-14w, Trapp district, Barton County, had Arbuckle lime at 3,301 feet, total depth 3,323 feet, was acidized and made potential of 2,090 bbls. of oil.

Texas Co. No. 4 Disque, NE NE SW section 3-17-11w, Kraft pool, had Arbuckle lime at 3,330 feet, was bottomed at 3,374 feet, swabbed 196 bbls. of oil naturally in five hours, was acidized, pumped 266 bbls. of oil the first four hours and made potential of 1,560 bbls. of oil with 2½ per cent water.

Arvin & Bennett No. 3 Steckel, SE SE SW section 1-20-11w, Silica field, found Arbuckle lime at 3,271 feet, total depth 3,284 feet, was treated with acid and made potential of 1,185 bbls. of oil.

Stanolind Oil & Gas Co. No. 4 Dick, SE SE NW section 3-20-11w, topped Arbuckle lime at 3,304 feet, was bottomed at 3,330 feet, plugged back to 3,315 feet, perforated casing, acidized and made potential of 324 bbls. of oil.

Magnolia Petroleum Co. No. 16 Roetzel, SW SE SE section 24-20-11w, South Silica pool, was completed for potential of 504 bbls. of oil from Arbuckle lime at 3,254 feet, total depth 3,264 feet.

Wells completed in Barton County the previous week included:

Paul Martin and others No. 1 Kultgen, SE SE NW section 16-16-12w, total depth 3,354 feet, potential 637 bbls. of oil. Sinclair Prairie Oil Co. No. 2 Hoffman, C E half E half NE section 7-16-13w, total depth 3,371 feet, potential 1,274 bbls. of oil. T. C. Johnson No. 7 Bitter, C W half W half NW section 8-18-13w, bottomed at 3,373 feet, potential 1,863 bbls. of oil. British American Oil Producing Co. No. 1 Templing, SE SW NW section 12-16-14w, dry and abandoned at 3,406 feet, total depth. Shell Petroleum Corp. No. 1 Hoffman B, NW NW NE section 12-16-14w, total depth 3,332 feet, potential 819 bbls. of oil. Same company's No. 2 Schneider A, SE cor. section 12-16-14w, total depth 3,416 feet, potential 630 bbls. of oil. Same company's No. 2 Burmeister, NW NW SE section 3-17-11w, total depth 3,345 feet, potential 2,202 bbls. of oil. Magnolia Petroleum Co. No. 9 Steckel, SW SW NW section 1-20-11w, bottomed at 3,288 feet, potential 630 bbls. of oil. Stanolind Oil & Gas Co. No. 11 Panning, SE SE NE section 2-20-11w, total depth 3,281 feet, potential 2,035 bbls. of oil. Same company's No. 8 Schartz A, NW cor. section 2-20-11w, total depth 3,293 feet, potential 1,556 bbls. of oil.

New work in Barton County: Cities Service Oil Co. No. 2 Bitter D, NE NE section 8-16-13w, location; Magnolia Petroleum Co. No. 10 Steckel, NW SW NW section 1-20-11w, set 13-inch casing at 195 feet; Elmer Ash No. 1 Schartz B, NW NE SW section 7-20-11w, rig; Magnolia Petroleum Co. No. 17 Roetzel, NW SE SE section 24-20-11w, cellar.

Estimated Daily Production

Estimated daily production for Kansas for the week ending May 28, and for the preceding week, was as follows:

	Barrels	
	May 28	May 21
Oxford City	1,225	1,225
Burrton	9,975	10,000
Ritz-Canton	5,750	5,025
Graber	1,600	2,625
Hollow-Nikkel	3,100	3,125
Lerado	1,150	1,000
Voshell	2,575	2,325
Wellington	700	1,975
Ellsworth County:		
Lorraine	2,375	1,375
Other pools	1,215	1,300
Rice-Barton counties:		
Bloomer	2,275	2,250
Chase	4,050	4,925
Geneseo	1,500	2,575
Raymond	825	750
Silica	9,325	13,150
Silica—South	1,475	1,825
Keesling	850	675
Wherry	3,975	4,275
Miscellaneous Rice	3,140	3,255
Miscellaneous Barton	4,280	6,000
Russell County:		
Fairport	1,905	2,040
Gorham	1,455	1,425
Russell	940	955
Sullivan	5,050	4,340
Trapp	6,205	6,530
Miscellaneous Russell	5,525	6,735
Sedgwick County:		
Valley Center	985	985
Miscellaneous	2,780	2,865
Ellis County:		
Bemis	5,125	6,425
Miscellaneous	2,535	3,330
Kingman County	620	595
Stafford County	2,970	3,365
Greenwood County	9,350	9,400
Butler County	14,000	14,500
Other fields	22,745	23,305
Total Kansas	143,550	155,450

Russell County

Gulf Oil Corp. No. 8 Mollie, SW SE SE section 25-15-14w, Trapp field, Russell County, found Arbuckle lime at 3,299 feet, was bottomed at 3,302 feet, pumped 517 bbls. of oil in 10 hours, was acidized and made potential of 1,864 bbls. of oil, with 312 bbls. of water.

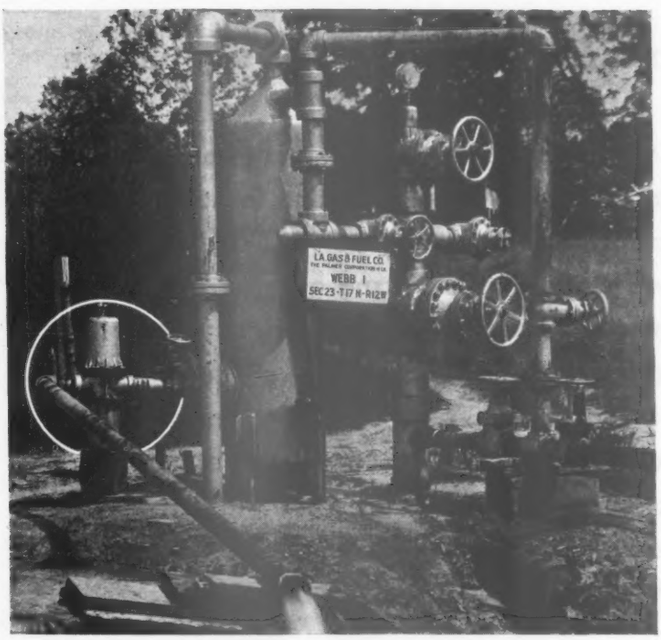
Cities Service Oil Co. No. 1 Carter, SE SE NE section 29-14-13w, Hall area, topped Kansas City lime at 2,883 feet, total depth 2,927 feet, was acidized and made potential of 1,321 bbls. of oil.

Continental Oil Co. No. 2 Rein, A, NE NE SW section 27-14-13w, found Kansas City lime at 2,842 feet, total depth 3,892 feet, was acidized, pumped 394 bbls. of oil in the first four hours, 461 bbls. the next four hours and made potential of 2,363 bbls. of oil.

Two Russell County wells were completed the preceding week. Darby Petroleum Corp. No. 4 Dumler C, SW SE NE section 11-14-15w, was bottomed at 3,096 feet and made potential of 755 bbls. of oil. Coralena Oil Co. No. 8 Deines, NW NE NE section 36-15-14w, made potential of 2,139 bbls. of oil at total depth of 3,299 feet.

First reports of new activity in Russell County: Stanolind Oil & Gas Co. No. 2 Rein, SE NW NW section 25-14-14w, location; Twin Drilling Co. No. 1 Knabe, SW

AUTOMATIC DRAINAGE for Gas Well Separators



NEW BULLETIN

Copies of this bulletin will be sent to any reader free on request. If you are interested in steam trap applications, ask for a copy of "The Armstrong Steam Trap Book."

THE use of Armstrong Traps for draining gas well separators is only one of several interesting applications described in the new bulletin, "Automatic Drainage for Natural Gas Pipe Lines." The above picture shows a No. 235 compound trap used for this service in Louisiana. This trap is recommended for gas pressures up to 250 lbs. per sq. in. At 250 lbs., it has a continuous discharge capacity of 73,500 lbs. of water per hour. Other standard sizes are available for higher or lower pressures and for larger or smaller capacities. Complete information on request. ARMSTRONG MACHINE WORKS, 868 Maple St., Three Rivers, Mich.

ARMSTRONG TRAPS

Automatic Drainage for

REFINERIES · GAS PIPE LINES · DRILLING RIGS

cor. section 12-15-12w, drilling below 660 feet; El Dorado Refining Co. and others No. 1 Ruby, NW NW NE section 1-15-13w, moving in machine; Shields and others No. 1 Rogg, C E half W half NW section 9-15-13w, location.

Ellsworth County

Cities Service Oil Co. and others No. 2 Schroeder A, C N half N half SW section 29-17-9w, Schroeder pool, Ellsworth County, found Arbuckle lime at 3,226 feet, total depth 3,230 feet, pumped 212 bbls. of oil the first four hours and made potential of 1,166 bbls. of oil.

Same operators' No. 1 Schroeder B, NE cor. section 30-17-9w, pumped a small amount of oil but water predominated and it was abandoned at 3,242 feet, total depth.

Ellis County

Margay Oil Co. No. 6 Johansen, NW SE SE section 22-11-17w, Bemis field, Ellis County, had Arbuckle lime at 3,381 feet, total depth 3,387 feet, pumped 485 bbls. of oil the first four hours, 488 bbls. the next four hours and make potential of 2,911 bbls.

Cities Service Oil Co. No. 10 Hall B, C W half E half SW section 26-11-17w, pumped 385 bbls. of oil the first four hours and made potential of 2,310 bbls. of oil. Top of Arbuckle lime was 3,543 feet, total depth 3,549 feet.

Republic Natural Gas Co. No. 1 Joy, NW NE NW section 14-12-18w, topped Arbuckle lime at 3,682 feet, was bottomed at 3,699 feet, acidized, pumped 156 bbls. of oil the first four hours and made potential of 936 bbls. of oil, with 2½ per cent water.

An Ellis County completion of the preceding week was Vickers Petroleum Co. No. 1 Ubert, SW SW SE section 1-13-18w. It made potential of 1,201 bbls. of oil at total depth of 3,610 feet.

McPherson County

Continental Oil Co. and others No. 12 Hetzke, SE SE NE section 29-21-1w, Graber pool, McPherson County, found Hunton lime at 3,312 feet, total depth 3,335 feet, was acidized and made potential of 464 bbls. of oil.

Continental Oil Co. No. 3 Chavez, SW SW NE section 20-21-1w, was acidized and made potential of 327 bbls. of oil, producing from Hunton lime topped at 3,297 feet, total depth 3,337 feet.

E. B. Shawver and Magnolia Petroleum Co. No. 3 Klassen B, SW SE NW section 21-19-1w, Ritz-Canton pool, found Wilcox sand at 3,339 feet, total depth 3,427½ feet, swabbed 125 bbls. of oil in 24 hours, and was completed as a 25-bbl. minimum well.

H. & M. Drilling Co. No. 1 Helmer Ek, SW SW NE section 24-19-3w, was bottomed at 3,017 feet, plugged back to 3,028 feet and was abandoned.

Pawnee County

Kessler Oil & Gas Co. and British American Oil Producing Co. No. 1 Belt, SE SE NW section 13-20-16w, Pawnee Rock area, Pawnee County, had Arbuckle lime at 3,760 feet, total depth 3,813 feet, and made potential of 719 bbls. of oil, with 2,790,000 feet of gas.

Ness County

Continental Oil Co. No. 1 Shiner, C W half W half SW section 18-18-25w, Aldrich area, Ness County, topped Mississippi lime at 4,459 feet, had 1,300 feet of oil in the hole at 4,483 feet, total depth, but water intruded after acid treatment. It was plugged back to 4,423 feet, casing was perforated, water intruded and it was abandoned.

Butler County

National Refining Co. No. 1 Sutter D, NE SE SW section 1-28-6, McCullough pool, Butler County, had Wilcox sand at 3,175 feet, Arbuckle lime at 3,188-92 feet, total depth, and made potential of 211 bbls. of oil.

Richmond Drilling Co. No. 2 Bausinger, NE SE SW section 24-27-3e, Bausinger pool, found Viola lime at 2,988 feet, Wilcox sand 3,051-56 feet, total depth, was shot and pumped 10 bbls. of oil and 7 bbls. of water daily from Viola lime.

Progressive Oil Co. No. 1-A Furham, SE SE SW section 8-23-4e, Elbing pool, topped Kansas City lime at 1,970 feet, first oil 2,041 feet, total depth 2,092 feet, was acidized and pumped 25 bbls. of oil and 275 bbls. of water daily.

Heilman & Harwood No. 1 Sawyer, SE NE NE section 10-28-7, was a location.

Reno County

Transwestern Oil Co. No. 6 Teten, NE NW SE section 12-23-4w, Burrton field, Reno County, found Chat at 3,272-3,433 feet, total depth; perforated casing, acidized, flowed 127 bbls. of oil the first four hours, 131 bbls. of oil and 6 per cent water the next four hours and made potential of 763 bbls. of oil.

Completions of the preceding week in Reno County:

Sinclair Prairie Oil Co. No. 5 Collins, C W half NW SW section 3-24-4w, total depth 3,380 feet, potential 1,455 bbls. of oil. Ballard & Wallace No. 1 Brown, SE SE SW section 4-24-4w, abandoned at 420 feet. Nadel & Gussman No. 1 Mueller, C E half W half NW section 19-24-4w, total depth 3,387 feet, potential 598 bbls. of oil. Salt City Gas Co. No. 1 Yoder, SE cor. section 28-24-5w, total depth 3,457 feet, produced 15,100,000 feet of gas.

Albert Jones and others No. 1 Shepherd, NW cor. section 22-26-9w, was at old total depth of 4,153 feet, preparing to recomplete.

Rice County

The following wells were recent completions in Rice County:

Continental Oil Co. No. 1 Powell, C E half W half E half NW section 31-18-7w, total depth 3,228 feet, potential 930 bbls. of oil.

Cities Service Oil Co. No. 1 Ross, SE SW NE section 11-18-8w, made potential of 382 bbls. of oil at 3,258 feet, total depth.

Same company's No. 1 Purcell, SW SE NE section 28-19-9w, was dry and abandoned at 3,250 feet, total depth.

Magnolia Petroleum Co. No. 2 Sharp, SW SW NW section 8-20-9w, was completed as a 15-bbl. well at 3,282 feet, total depth.

New work in Rice County: C. H. Weaver No. 1 Lansing, NE SE NE section 26-18-8w, rig; Salt City Gas Co. No. 1 Welch, C S half S half SE section 26-19-8w, spudded.

Harvey County

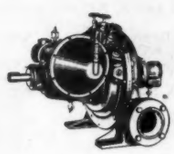
Central Oil Co. No. 2 Short, C W half W half NE section 30-23-3w, Burrton field, Harvey County, was a re-

(Continued on Page 106)

In manholes or in *any* confined working space: tunnels, pipe galleries, process tanks, storage bins, etc., the *Cable Manhole Ventilators* (Bulletin 163).

For rapid cooling and ventilating of boilers, tanks, retorts, etc., the *Boiler Manhole Blower* (Bulletin 161-3).

For directing a flow of cool air upon workmen (also cooling off furnaces, ventilating motors, generators, etc.) the *Heat Killer* (Bulletin 160-4)

★ 

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COPPUS PRODUCTS — Designed for your industry — Engineered for you

Rocky Mountain Area

By
T. R. INGRAM

Extension of Eunice Area, Or a New Pool, in Prospect

DENVER, COLO, May 30.—A new producing area in Lea County County, New Mexico, was opened the past week at Continental Oil Co. No. 1-J-2 State, C NW NE section 2-22-36. It was reported shut in for storage after flowing 64 bbls. of oil in two hours, with 8,750,000 feet of gas daily. Total depth was 3,800 feet in lime, with the best pay found in the bottom 40 feet. This wildcat is 2¼ miles northeast of the South Eunice pool and may be classed as an extension of that area, or it may open a new pool.

Another good producer was near completion in the increasingly important Vacuum district. It was Ohio Oil Co. No. 2 State-Warn, C NE SW section 31-17-35, in the southeast part of the field. It flowed 61 bbls. of oil an hour through tubing set at 4,710 feet. It was bottomed at 4,750 feet in lime. Repollo Oil Co. No. 1 State, Lease 197, SE section 6-17-34, a probable 4-mile northwest extension of the Vacuum area, was swabbing an average of 20 bbls. of oil daily as drilling continued below 4,791 feet in lime.

Completions of the week in southeastern New Mexico included six oil wells in Lea County and a failure and a gas well in Eddy County.

Anderson-Prichard Oil Corp. No. 4 Langlie, NE SW NE section 8-25-37, Langlie area, Lea County, topped pay at 3,400 feet, total depth 3,477 feet, was shot and flowed 260 bbls. of oil in the last 13 hours of a 27-hour test, flowing through tubing. Gas gauged 960,000 feet.

Culbertson & Irwin No. 2 Liberty Royalty, C N half SW NW section 3-25-37, flowed 370 bbls. of oil daily and naturally through 2-inch tubing. Top of pay was 3,345 feet, total depth 3,467 feet.

Amerada Petroleum Corp. No. 2-Q State, C W half NE SE section 16-20-37, Monument field,, found pay at 3,828 feet, was bottomed at 3,842 feet, and flowed 2 bbls. of oil an hour, naturally. It was acidized with 2,000 gallons and flowed 288 bbls. of oil in seven hours through three-fourths inch choke, with 1,140,000 feet of gas.

Gulf Oil Corp. No. 8-F Bell, C NW NW section 36-20-36, topped pay at 3,785 feet, total depth 3,860 feet, and flowed 302 bbls. of oil naturally in 12 hours through 2-inch tubing. Gravity of the oil was 33.4 degrees.

Humble Oil & Refining Co. No. 5 Fopeano, C E half SW SE section 26-20-36, flowed 21 bbls. of fluid daily through 2-inch tubing, cutting 5 per cent basic sediment and water. Flow was on gas lift. Gravity of the oil was 33.8 degrees.

In the Cooper area, Repollo Oil Co. No. 4-B Whitten, NE NE SE section 4-24-36, had pay at 3,602 feet, total depth 3,650 feet, and flowed 60 bbls. of oil naturally in four hours, through 2-inch tubing.

In the Pecos Valley area, Eddy County, Red Gulch Oil Co. No. 2 Keyes State, C SW SE section 4-17-28, was completed for 2,500,000 feet of sweet gas daily. Pay was found at 1,685 feet and it was bottomed at 1,695 feet in lime.

Barnett Oil Development Co. No. 1 King, C NW SE section 23-26-30, wildcat in southeastern Eddy County, was dry and abandoned in shale at 980 feet, total depth.

Lea County

Addison Oil Co. No. 2 Knight, C SW NW sec. 27-24-37. Drlg. 1,695 ft.
Amerada Pet. Corp. No. 3 Laughlin, C NW NE sec. 9-20-37. T.D. 2,855 ft.; set 8-in. 2,573 ft.
Amerada Pet. Corp. No. 2 State VA, C NW SW sec. 23-17-34. Drlg. 4,265 ft.
Amerada Pet. Corp. No. 2 James Stuart, C W½ SW NW sec. 14-25-37. Drlg. 2,776 ft.
Anderson-Prichard Oil Corp. No. 2 Langlie, SE sec. 8-25-37. Drlg. 3,420 ft.
Anderson-Prichard Oil Corp. No. 1 Wells, C SE SE sec. 5-27-37. Drlg. 3,610 ft.
Anderson-Prichard Oil Corp. No. 2 Wells, C SW SE sec. 5-27-37. C.&P.
Atlantic Ref. Co. No. 1 State, C SE SW sec. 32-24-37. T.D. 3,437 ft.; rng. csg.; S. gas. at 2,960 ft.
Cities Service Oil Co. No. 1-H State, C NE NE sec. 17-22-36. T.D. 3,884 ft.; prep. to deepen.
Continental Oil Co. No. 2-F-1 State, C SW NE sec. 1-21-36. T.D. 3,802 ft.; 7 B.O. and 2½ M. ft. gas; tstg.
Continental Oil Co. No. 1-J-2 State, C NW NE sec. 2-22-36. T.D. 3,760 ft.; F. 5 B.O. in 8 hrs., 5½ M. gas.
Continental Oil Co. No. 1-B-15 Britt, C W½ NW NW sec. 15-20-37. T.D. 3,892 ft.; retreated and F. 2½ B.O. in 10 hrs.
Continental Oil Co. No. 3 Jack, C SE NE sec. 20-24-37. T.D. 505 ft.; W.O.C.
Continental Oil Co. No. 1-A-31 Marsh, SE sec. 31-20-39. Wildcat; T.D. 4,352 ft.; fsg.
Continental Oil Co. No. 5 Reed, C W½ NE SE sec. 23-20-36. T.D. 3,742 ft.; W.O.C.
Continental Oil Co. No. 2 Sanderson, NE NE SW sec. 14-20-36. Drlg. 3,389 ft.
Continental Oil Co. No. 9 Sanderson, NE SE NW sec. 14-20-36. Drlg. 3,143 ft., L.
Continental Oil Co. No. 4-E-17 State, C SW NW sec. 17-22-36. T.D. 3,870 ft.; F. 2½ B.O. in 6 hrs.; tstg.
Cranfill & Germany No. 1 Weir, C NE NE sec. 15-20-37. T.D. 4,210 ft.; S.D.O.
Culbertson & Irwin No. 4 Alston, SW SE NW sec. 26-25-37. T.D. 3,206 ft.; drlg. plug.
Culbertson & Irwin No. 1 Dabbs, NE NE NW sec. 35-25-37. Drlg. 2,358 ft.
Culbertson & Irwin No. 1 Henry, C N½ NW SW sec. 26-25-37. R.U.S.T.
Culbertson & Irwin No. 6-A Humphrey, NE SW SE sec. 3-25-37. T.D. 3,445 ft.; F. 20 B.O.P.D.; S.I.
Culbertson & Irwin No. 3 Liberty, C N½ NW SW sec. 3-25-37. C.&P.
Danglade & Clower No. 1 Glier, C SW NE sec. 32-22-37. T.D. 3,680 ft.; F. 124 B.O. in 48 hrs.
L. E. Elliott No. 2 Elliott, NE NW SE sec. 26-20-36. T.D. 3,780 ft.; F. 5 B.O.P.H. for 12 hrs.; tstg.
A. R. Eppenauer No. 1 Stuart, NW NE NE sec. 22-25-37. T.D. 3,373 ft.; flwd. 15 B.O.P.H. at 3,321 ft.
J. E. Farrell No. 2-C Walden, C SE SW sec. 15-22-37. Drlg. 3,700 ft.
Great Western Prod. Co. No. 1-C State, C NE SW sec. 7-19-37. T.D. 1,399 ft.; W.O.C.
Gulf Oil Corp. No. 1 Alley, C NE SE sec. 10-23-37. T.D. 3,713 ft.; P.B. 3,688 ft.; S.D.O.
Gulf Oil Corp. No. 1 Boyd, sec. 23-22-37. T.D. 3,681 ft.; tstg.
Gulf Oil Corp. No. 4 Day, C E½ SW NW sec. 6-22s-36. C.&P.
Gulf Oil Corp. No. 2-D Kutter, C SE SW sec. 8-19-37. T.D. 4,155 ft.; P.B. 4,100 ft.; S.D.O.
Gulf Oil Corp. No. 2 Ramsey, C SW SW sec. 27-21-36. T.D. 3,895 ft.; P.B. 3,871 ft.; F. 197 B.O. and 18 B.W. in 18 hrs.; S.I.
Humble O. & R. Co. No. 3-H State, C NW NW sec. 34-22-27. Drlg. 3,355 ft.
Humble O. & R. Co. No. 3 Williams, C SW NW sec. 34-24-37. T.D. 3,532 ft.
Jal Nat. Gas Corp. No. 2 Justis, NE sec. 20-25-37. T.D. 3,029 ft.; tstg.
Magnolia Pet. Co. No. 1 Brunson-Argo, C NW NE sec. 9-22-37. Drlg. 3,664 ft.; S.O. at 3,622 ft.
Magnolia Pet. Co. No. 1 State G, NW NW NE sec. 34-17-34. T.D. 4,905 ft.; P.B. 4,794 ft.
Magnolia Pet. Co. No. 3-K State, C SE SE sec. 31-17-35. Drlg. 2,995 ft.
Magnolia Pet. Co. No. 2 State-Bridges, sec. 14-17-34. T.D. 4,593 ft.; flwd. 51 B.O. in 1 hr. naturally.
Magnolia Pet. Co. No. 3 State-Bridges, C NE NW sec. 26-17-34. Drlg. 2,220 ft.
Magnolia Pet. Co. No. 6 State-Bridges, C SW NW sec. 23-17-34. T.D. 4,755 ft.; pay 4,618 ft.; shot, to test.
Magnolia Pet. Co. No. 7 State-Bridges, C SW NE sec. 23-17-34. Drlg. 3,888 ft.
Magnolia Pet. Co. No. 8 State-Bridges, C NW SE sec. 23-14-34. Drlg. 3,990 ft.
Maljamar O. & G. Co. No. 9 Baish, C NW NW sec. 21-17-32. Drlg. 3,270 ft.
Maljamar O. & G. Co. No. 4 Mitchell, C NE NE sec. 20-17-32. Drlg. 3,151 ft.
Maljamar O. & G. Co. No. 5 Mitchell, C NW NW sec. 19-17-32. Drlg. 1,850 ft.
Jas. A. Mascho No. 2 Cloyd, C SW SW sec. 20-22-33. Loc.
C. T. McLaughlin No. 1 Polhamus, NE sec. 9-24-37. T.D. 3,672 ft.; S.D.O.
National Drlg. & Prod. Co. No. 1 Flint, C NE NE sec. 29-20-34. Wildcat; drlg. 3,710 ft.
Ohio Oil Co. No. 1 Kutter D, C SW SW sec. 18-19-37. Drlg. 3,625 ft.
Ohio Oil Co. No. 1 State-Fleming, NE cor. sec. 2-26-37. Drlg. 2,335 ft.
Ohio Oil Co. No. 1 State-McCallister, C SE SW sec. 25-17-34. C.&P.
Ohio Oil Co. No. 7 State-McDonald, C SW SE sec. 16-22-36. T.D. 3,871 ft.; C.O.
Ohio Oil Co. No. 2 State-Warn, C NE SW sec. 31-17-35. Drlg. 4,558 ft.; S.O. at 4,426 ft.
Parker Drlg. Co. No. 2 Irwin, C W½ NW SW sec. 35-24s-37. Drlg. 1,280 ft.
Paton Bros. No. 2 Wilkinson, C SE SE sec. 8-18-31. Loc.
Penrose & Rowan No. 1 Christmas, SE cor. sec. 28-22-37. R.U.M.
Lem Peters No. 1 L. J. May, C NW SE sec. 27-22-37. Drlg. 3,455 ft.
Lem Peters No. 1 T. O. May, C NW NE sec. 34-22s-37. Drlg. 1,985 ft.
Phillips Pet. Co. No. 3 Santa Fe, C SW NW sec. 5-18-35. Rig.
Phillips Pet. Co. No. 4 Santa Fe, C SW SE sec. 31-17-35. Drlg. 3,980 ft.
Phillips Pet. Co. No. 5 Santa Fe, C NW SW sec. 31-17-35. Drlg. 3,990 ft.
Phillips Pet. Co. No. 6 Santa Fe, C SW SE sec. 21-17-35. Drlg. 4,051 ft.; S.G. 4,046 ft.
Phillips Pet. Corp. No. 7 Santa Fe, C SE SW sec. 27-17-35. Loc.
Plains Prod. Co. No. 1 Humphreys, NE sec. 3-25-37. Loc.
Repollo Oil Co. No. 2 Hair, NW SW NW sec. 9-24-37. Drlg. 2,285 ft.
Repollo Oil Co. No. 1 State, SE cor. sec. 6-17-34. Drlg. 4,756 ft.; swbg. 20 B.O.P.D.
Repollo Oil Co. No. 6-B Whitten, NW NW NE sec. 4-24-36. Loc.
Republic Prod. Co. No. 1 State, C NW SW sec. 32-17-35. Drlg. 245 ft.
Rowan & Nichols No. 1 State, C NE NW sec. 22-10-37. Drlg. 2,150 ft.
J. M. Rush No. 2 Wantz, C NW SW sec. 21-21-37. T.D. 160 ft.; W.O.C.
Harry J. Schafer No. 1-A State, C E½ NW NE sec. 26-20-36. T.D. 3,865 ft.; swb. some oil; P.B. 3,845 ft.; retreated and swb. 10 B.O.P.D.; treated and swbg.; no gauges.
Shasta Oil Co. No. 2 Woolworth, NE NW NW sec. 28-24-37. T.D. 3,048 ft.; drlg. by tools at 2,974 ft.
Shell Pet. Corp. No. 4-E State, C SW NW sec. 12-20-36. Drlg. 3,800 ft.
Shell Pet. Corp. No. 2-C State, NE SE NE sec. 24-21-35. Drk.
Skelly Oil Co. No. 5 J. B. Baker, C SE NW sec. 27-22-37. T.D. 3,620 ft.; tstg.
Skelly Oil Co. No. 3 G. W. Sims, C NW NE sec. 9-23-37. T.D. 3,642 ft.; C.O.
Skelly Oil Co. No. 1-C R. R. Sims, sec. 3-23-37. Drlg. 3,688 ft.
Skelly Oil Co. No. 1-E W. P. Sims, C NW NE sec. 10-23-37. T.D. 3,625 ft.; flwd. 452 bbls. in 24 hrs.
Skelly Oil Co. No. 1-L State, C SW NW sec. 2-25-37. Drlg. 2,870 ft.
Stanolind O. & G. Co. No. 2-A Hill, C SE NE sec. 6-21-37. T.D. 3,785 ft.; est. 140 B.O.P.D.
Stanolind O. & G. Co. No. 3-B Farnsworth, C E½ NE SW sec. 7-26-37. Loc.
Stanolind O. & G. Co. No. 5-B Myers, C NE SW sec. 9-24-37. T.D. 3,280 ft.; drlg. plug.
Stanolind Oil Co. of Texas No. 1 State, C SW NW sec. 32-17-35. Loc.
W. H. Street No. 4 Woods, C NE NE sec. 22-22-37. T.D. 3,686 ft.; acid. and F. 4 B.O.P.H. for 6 hrs.; to test.
W. H. Street No. 2 Farrell, C NW SE sec. 22-22s-37. T.D. 2,365 ft.; S.D.R.
Texas Co. No. 3 Black, C NW NE sec. 21-24-37. Drlg. 2,400 ft.
Texas Co. No. 2 Cagle, SE NE NE sec. 9-26s-37. Loc.
Texas Co. No. 1 Corbin, C NW SW sec. 19-18-33. T.D. 5,118 ft.; P.B. 5,112 ft.; R.U.
Texas Co. No. 4 Fristoe, NW NE SE sec. 3-25-37. T.D. 3,302 ft.; C.O.
Texas Co. No. 3 J. S. Lea, SW NE SW sec. 14-20-34. Loc.
Texas Co. No. 1-N State, C SW SW sec. 30-17-35. C.O. to 4,747 ft.; P.B. 4,700 ft.; W.O.C.
Texas Co. No. 3-O State, C SW NE sec. 36-17-34. Drlg. 4,260 ft., L.
Texas Co. No. 1-P State, C NW SE sec. 7-18-35. Drlg. 4,092 ft.
Texas Co. No. 1-Q State, C SE SE sec. 25-17-34. C.&P.
Texas Co. No. 2-Q State, C SW SE sec. 25-17-34. Drlg. 1,355 ft.
Texas Pacific C. & O. Co. No. 12-A State, C NE SE sec. 7-22-36. T.D. 3,527 ft.; cmtg.
Twin Drlg. Co. No. 1 Corrigan, C SW NE sec. 4-22-37. R.U.R.
Twin Drlg. Co. No. 1 State, C SE NW sec. 32-21-37. Drlg. 2,118 ft.
Two States Oil Co. No. 2 Cole, O.W.D.D., C NE NE sec. 16-22-37. O.T.D. 1,141 ft.; T.D. 1700 ft.; S.D.R.
Two States Oil Co. No. 4 Cole, C NW NW sec. 16-22-37. Drlg. 2,526 ft.
Weier Drlg. Co. et al No. 1 Woolworth, NE NE SW sec. 28-24-17. Drlg. 1,340 ft.
Sam Weiner No. 1 Smith, NE cor. sec. 4-25-37. T.D. 3,060 ft.; setting 7-in. csg.
Weiner No. 1 Parcell, C SW NE sec. 8-23-28. Drlg. 3,035 ft.
Western Gas Co. No. 1 Curry, C SE SE sec. 1-24-36. T.D. 3,697 ft.; F. 4 B.F.P.H., 50% W.; S.D.O.
Western Gas Co. No. 1 Matkins, C SE SE sec. 15-23-36. T.D. 3,665 ft.; P.B. 3,658 ft.; cmtg.

Eddy County

F. E. Baker No. 1 Eddy, NE sec. 12-22-37. Drlg. 2,175 ft.
Danciger O. & R. Co. No. 4-A Turner, C SW SW sec. 18-17-31. Drlg. 3,490 ft.; F. 100 B.O. in 24 hrs. while drlg.
Danciger O. & R. Co. No. 1-B Turner, CEL NE SE sec. 17-17-31. Loc.
D. & B. Oil Co. No. 3 Jenkins, NE NE NW sec. 20-17-30. T.D. 2,900 ft.; W.O.C.
English & Harmon No. 1 Dougherty, NE NE SW sec. 3-17-27. T.D. 955 ft.; reaming.
Etz Bros. No. 5 State, SE NE SE sec. 16-17-30. Loc.
Finley & Cherry No. 1 Buchley, C NW NW sec. 28-16-31. Wildcat; T.D. 3,750 ft.; S.D.
Flint Prod. Co. No. 1-B State, SE sec. 20-17-30. Drlg. 3,830 ft.
C. J. Frederick No. 1 Reed, C NE SW sec. 28-24-28. T.D. 2,770 ft.; S.D.O.
F. W. & Y. Oil Co. No. 8-A Gissler, NE NW NE sec. 23-17-30. T.D. 3,227 ft.; drlg. by lost tools.

F. W. & Y. Co. No. 9-A Gissler, C SE NE sec. 14-17-30. T.D. 3,500 ft.; swb. & F. 35 B.O.P.D.; retreating
F. W. & Y. Oil Co. No. 3 Jackson, C NW SE sec. 13-17-30. T.D. 2,953 ft.; fsg.
Grayburg Oil Co. No. 4 Keely, SE SW NE sec. 24-17-9. T.D. 3,588 ft.; to test.
H. A. Hartwell No. 1 Vandagrift, NE NE SE sec. 8-18-27. T.D. 2,000 ft.; S.D.O.
R. L. Holcomb No. 1 State, NW sec. 22-17-28. T.D. 1,980 ft.; S.D.O.
C. F. Ingram No. 1 Page, NE NE SW sec. 15-21-28. Drlg. 1,512 ft.
Paul Moran No. 1 Crawford & Smith, NW NW SW sec. 24-24-36. T.D. 1,928 ft.; S.D.O.
Paton Bros. No. 2 Ginsberg, C SE SE sec. 8-18-31. Drlg. 2,850 ft.
Premier Pet. Co. No. 1-B Maddren, NW SW SW sec. 27-17-30. Drlg. 775 ft.
Repollo Oil Co. No. 3-A Keel, SW SE SW sec. 7-17-31. Drlg. 3,012 ft.
Repollo Oil Co. No. 3-C McIntyre, NW SE NE sec. 20-17-30. Drlg. 770 ft.
Repollo Oil Co. No. 3-A Parke, NW cor. sec. 22-17-30. T.D. 2,932 ft.; W.O.C.
Repollo Oil Co. No. 4-A Parke, NW SE NW sec. 22-17-30. Drlg. 1,520 ft.
Paul Sarget No. 1 State, NE sec. 16-17-31. T.D. 3,749 ft.; P.B. 3,745 ft.; tstg.
W. A. Snyder No. 1 Pecos Irrigation, C NE SE sec. 15-25-28. T.D. 3,330 ft.; S.D.O.
Neil H. Wills et al No. 3-A State, NE SE SW sec. 20-20-30. Drlg. 1,433 ft.
Western Drlg. Co. No. 1-A Western, SE SW NW sec. 23-17-29. Drlg. 2,910 ft.; S.G. 2,890 ft.

COLORADO

Archuleta County

Definite reports on what happened at the Pagosa Oil & Development Co. No. 1 Macht, a wildcat drilling on the Pagosa dome, 16 miles to the northwest of the William E. Hughes Estate's Gramps pool, are awaiting the return of scouts from the well. A telephone message from Pagosa Springs said that the hole is not in the Dakota sand but in blue shale which is found above the Dakota. There is some oil in the hole, but the quantity was not stated. No water has been encountered on the way down to the present depth (1,120 feet).

Boone Dev. Co. No. 1 Newton, SE NW SE sec. 18-33n-1e. M.I.M.
Pagosa Oil & Dev. Co. No. 1 Macht, S sec. 32-36n-1w. S.D. 1,120 ft. for csg.

Cheyenne County

The Gulf Oil Corp. No. 1 Union Pacific-Larson, C SE NW section 13-13s-49w, Mount Pearl district, struck granite at 6,360 feet and is shut down for orders. It may core 8 or 10 feet to be sure of the formation. Whether the well will be plugged back to showing at around 4,800 feet and shot for a final test has not been announced.

Gulf Oil Corp. No. 1 Union Pacific-Larson, C SE NW sec. 13-13s-49w. Cg. 6,339 ft. in hd. Reagan ss.; (Cambrian series).

Fremont County

Stanley Thomas No. 1 Rickwalt, SE SE sec. 2-19s-70w. Drlg. 150 ft.

Garfield County

Roaring Fork Oil Co. No. 1 Patterson, C NE sec. 36-7s-88w. Mudded 8¼-in. at 721 ft.; after cmt. failures.

Grand County

The Interstate Oil & Refining Co. No. 1 Hinman, NE SE NW section 11-2n-81w, on the Dirt Creek structure, found water in the Dakota at 3,920 feet and is shut down for orders. It may be deepened to the Morrison.

Interstate Oil & Ref. Co. No. 1 Hinman, NE SE NW sec. 11-2n-81w. S.D. 3,920 ft.

Huerfano County

S. W. Pressey No. 1 Tomkins, NE NE NE sec. 10-29s-69w. M.I.M.
S. W. Pressey No. 2 Alamo, C SW SE sec. 3-27s-68w Rng. 8¼-in. at 1,200 ft.

LaPlata County

N. Spatter No. 1-X Bryce, SE SW SW sec. 31-33n-9w. Drlg. below 100 ft.

Mesa County

Continental Oil Co. et al No. 1 Miller, SW SW NW sec. 36-8s-91w. Drlg. 2,257 ft.

Moffat County

C. R. Privett No. 1 Sutton, NE NE SW sec. 1-5n-96w. Drlg. 200 ft. through Brown's Park formation.
Morapas Pet. Co. No. 1 Coles, SW SW SE sec. 1-3n-92w. T.D. 2,658 ft.; preparing to resume.

Montezuma County

McElmo Oil Co. No. 1 West, NE NW NW sec. 31-36n-17w. Drlg. 4,175 ft.

Park County

South Park Oil Co. No. 1 Lemar, NE NE SE sec. 34-11s-75w. T.D. 5,735 ft.; C.O. 70 ft. off bttm.

Prowers County

Continental Oil Co. No. 1 Ruby, C NE NW sec. 31-21s-44w. T.D. 1,240 ft.; rmg. 11-in. hole to 17-in.

Pueblo County

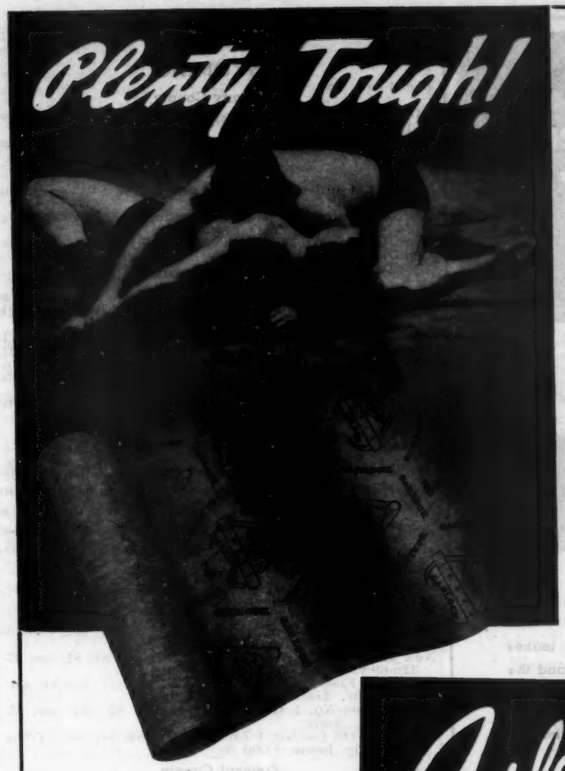
Eden Oil & Gas Co. No. 1 Horse Creek, SW SE sec. 29-19s-64w. M.I.M.
C. E. Puckett No. 1 Barber, NW sec. 35-21s-66w. Res. at 280 ft.

Routt County

Craig & Moore No. 1 Erwin, C SW NE sec. 33-7n-85w. Drlg. 875 ft.

Rio Blanco County

Buford Oil Co. No. 1 Govt., C SW SW sec. 16-1n-91w.



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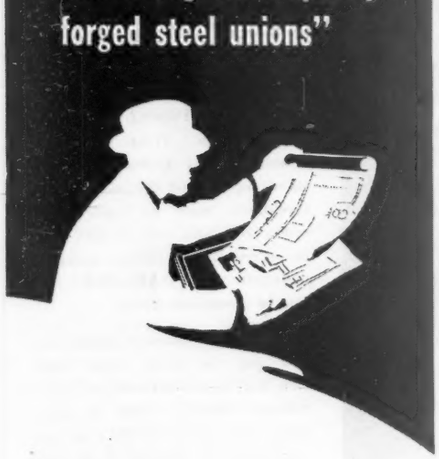

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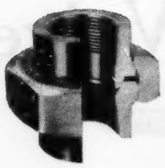

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WYOMING

Albany County

Murphy Oil Co. No. 12 Holst, SE NW NE sec. 13-17n-77w. Drlg. below 1,450 ft.
Murphy Oil Co. No. 13 Holst, SE SW NE sec. 13-17n-77w. Loc.

Big Horn County

Prescott & Mileski No. 1 Govt., NE NW SW sec. 15-1n-93w. Drlg. 536 ft.
Clifford S. Johnson No. 1 Johnson, CEL NW NW sec. 24-51n-93w. Rig; W.O. engine.
Joan Oil Co. No. 1 Howell, NE NW NE sec. 32-55n-97w. S.D. 3,385 ft.

Carbon County

Cunningham Oil Co., Inc., No. 1 Union Pacific-Cronberg, SE NE SE sec. 3-23n-79w. Cmtd. 10-in. at 506 ft. with 100 sacks; drlg. ahead; 15½-in. at 40 ft.
Producers Oil Co. No. 1 Lake Valley, 200 ft. S of CNL sec. 14-20n-88w. Res. drlg. 1,755 ft.; 12½-in. at 1,588 ft.
Ohio Oil Co. No. 3 Hazlett Est., NE SW SE sec. 34-23n-79w. Drlg. 2,659 ft.; top Sundance 2,270 ft.; to r.b. 2,551 ft.
Ohio Oil Co.-California Co. No. 3 State-Griffin, C SW NW sec. 36-21n-79w. Drlg. 3,806 ft.

Converse County

The New Era Fuel Co. No. 1 Boot Cattle, CSL SE SE section 1-31n-70w, was plugged and abandoned at 540 feet after going through the White River. It had a good show of gas in sand at 270-308 feet. Rig has been skidded to drill No. 2 to the gas sand, which was estimated at 3,000,000 feet in No. 1.

D. O. Gray No. 1 Lane, SW SE SE section 22-32n-69w, was plugged and abandoned at 650 feet.

Wyshawn Oil Co. No. 2 Lindley, NE SE SE sec. 34-32n-69w. Loc. (first report).
New Era Fuel Co. No. 2 Mary Gasper, SE SE SE sec. 25-32n-69w. M.I.M. (first report).
New Era Fuel Co. No. 2 Boot Cattle, CSL SE SE sec. 1-31n-70w. Loc. (first report).
E. B. Jones No. 1 O'Meara-Govt., NW SE NE sec. 17-32n-69w. Spdg.
Wyshawn Oil Co. No. 1 Lindley, NW SE SE sec. 34-32n-69w. Drlg. below 1,000 ft.

Fremont County

Consolidated Oil Properties No. 3 Ewart, C SW SE sec. 16-1n-1w. Cmtd. 8¼-in. at 820 ft. for W.S.O.; W.O.C.
Sinclair-Wyoming Oil Co. No. 2-B Muskrat, NW NW NE sec. 4-33-92w. Cg. 5,315 ft. in Lakota; top 5,306 ft.; S.O.
Stanolind O. & G. Co. No. 1 Govt., C SE SE sec. 3-33n-96w. T.D. 8,920 ft.; cmtd. 7-in. liner at 7,387-8,915 ft. with 205 sacks; perf. liner at 8,230-85 ft.; bailed down to 2,300 ft. and hole cleaned itself; S.I. for test.
Ben Stewart No. 1 Darnell, NE SE sec. 26-3n-1w. Drlg. 1,910 ft.

Hot Springs County

California Exploration Co. No. 1 Govt., NE SE NE sec. 12-44n-97w. Drlg. 4,070 ft.

Lincoln County

H. C. Harris et al No. 1 Govt., SE NW NW sec. 23-21n-117w. Drlg. 442 ft.

Natrona County

The General Petroleum Corp. No. 1 Government, a discovery in the Lakota sand at 7,978½-8,019 feet, which showed for 57 bbls. per hour on a drill stem test, cemented the 6⅝-inch at 7,978 feet, drilled out plug and is ready to test. The walls of the sand were scraped and preparations completed. Storage for 5,000 bbls. has been set up at the well.

Stanolind O. & G. Co. No. 26 T.P.-Wyo. Asso., C SE SW sec. 26-40n-79w. C.&P.
Western Producers, Inc., No. 1 Govt., NW SW SE sec. 5-39n-78w. S.D. 1,165 ft.
Stanolind O. & G. Co. No. 8 T.P.-Midwest Oil, C NW SW sec. 35-40n-79w. Loc.; W.O. compl. No. 26.
Stanolind O. & G. Co. No. 26 T.P.-Wyo. Asso., C SE NW sec. 35-40n-79w. T.D. 4,002 ft.; cmtd. 6⅝-inch at 3,996 ft.
General Pet. Corp. No. 1 Govt., C NW SE sec. 21-35n-77w. T.D. 8,019 ft.; cmtd. 6⅝-in. at 7,978 ft.; prep. to test.

Niobrara County

Lance Creek proved a center of interest with three completions, a near completion, a show for a well in a horizon not heretofore productive, a sale of government leases, announcement of a projected 230-mile pipe line to Denver and one new operation.

The Continental Oil Co. No. 11-1-0 Tom Bell, SE SW SW section 27-36n-65w, a diagonal offset on the southwest to the Minnelusa Oil Co. No. 1-A Lamb, the most northerly producer in the deep pay in the field, was completed at 5,417 feet for 746 bbls. in 24 hours through the tubing after acidizing with 2,000 and then with 3,000 gallons. It was completed in the Leo sand. The top of the first Sundance was at 3,915 feet; basal Sundance at 4,065 feet, and the Converse sand at 4,835 feet. Elevation is 4,360 feet. Production is approximately the same as in the offset.

The Continental Oil Co. No. 12-1-O Tom Bell, C SE SE section 33-36n-65w, on the northeastern side, was completed as a Sundance sand well at 4,004 feet and flowed 30 bbls. an hour or at the rate of 712 bbls. per day through the tubing on a five-hour test. It had the top of the basal Sundance at 3,932 feet. The 7-inch was cemented at 3,947 feet and the elevation is 4,381 feet. It is an east offset to the Argo Oil Co. No. 5 Ford, a Sundance sand producer.

The Ohio Oil Co. No. 10 Carrie Putnam, NW SE NW section 4-35n-65w, an outside well in the deep pay on the southeastern side of the field, flowed 45½ bbls. in one hour or at the rate of 1,092 bbls. per day from the Leo sand at 5,405-64 feet. Total depth is 5,473 feet and elevation 4,442 feet. It is just within the participating area under the unit agreement. The 7-inch is at 5,396 feet.

A. B. Cobb No. 3 Novick-Ong, SW SE SW section 6-35n-65w, an inside well on the west side and a west offset to his No. 2 Novick, had the Leo sand at 5,313-26 feet, which also is the total depth, and is a near completion. It was reported flowing and swabbing 60 bbls. an hour while testing and will make a good well.

Hewitt Brothers and J. E. Manning No. 1 Pecklow, SE cor. section 1-35n-66w, the most westerly well in the field and a northwest offset to C. L. Price No. 1

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Lamb, ran low on the Converse sand and found that horizon dry at 5,162 feet. It plugged back to the Minnekahta (Upper Permian) at 5,052-92 feet, set the 7-inch at 5,038 feet, and is drilling plug. It will acidize and test. It showed good saturation in the cores and may make a fair well. This is the first show of importance in that horizon.

C. L. Price No. 2 Lamb, C SE SW sec. 12-35n-65w. Bldg. rig (first report).
A. B. Cobb et al No. 3 Novick-Ong, SW SE SW sec. 6-35n-65w. T.D. 5,326 ft.; tstg.
MacKinnie Oil & Drlg. Co. No. 3 Thompson, NW NE NW sec. 7-35n-65w. T.D. 5,212 ft.; will drill by.
Minnelusa Oil Co. No 2 H. & M., NW NE NE sec. 8-35n-65w. Res. at 325 ft.
Hewitt Bros. and Manning No. 1 Pecklow, SE SE SE sec. 1-35n-66w. T.D. 5,160 ft.; P.B. to 5,070 ft.; prep. to test.
H. D. Moore et al No. 1 Beregren, NW sec. 23-35n-63w. Drlg. in Sundance 937 ft.; top Morrison 587 ft.
Continental Oil Co. No. 4 Apex-2, NW NE SE sec. 34-36n-65w. R.U.R.

Park County

Resolute Oil Co. No. 2 State, C SW SW sec. 16-57n-101w. Drlg. 1,230 ft. (first report, Badger Basin area).
Paul Stock No. 1 Govt., SE SE NE sec. 20-53n-101w. Drlg. 3,000 ft.

Sublet County

Yellowstone Oil Co. No. 1 Henry Budd, C SE SE sec. 6-30n-112w. Drlg. 100 ft.
Wyoming Pet. Corp. No. 1 Chas. Budd, C NE NE sec. 10-29n-113w. Drlg. 100 ft. hd. conglom.

Sweetwater County

Sinclair-Wyoming Co. No. 78, SW SW NW sec. 11-26n-90w. T.D. 4,090 ft.; cmtd. 6⅝-in. 4,063 ft. with 150 sacks; top Tensleep 4,073 ft.
Selegna Oil Co. No. 1 Union Pacific, SW SW sec. 11-20n-104w. T.D. 4,550 ft.; top Sundance 4,505 ft.; S.O. 4,505-35 ft.; Halliburton showed 8 stds. of W.

Washakie County

Wyoming O. & R. Co. No. 10-B Brome, C SE NE sec. 6-47n-90w. Drlg. below 1,500 ft.

Weston County

There were one completion and two new operations in the Osage field. The Osage Trust Co. No. 30, NE NW SW section 14-46n-64w, made 30 bbls. per day from sand at 1,943-55 feet after shot with 40 quarts.

Howland & Seneker, NE NW SW sec. 13-46n-64w. Drlg. 250 ft. (first report).
West Osage Oil Co. No. 3, SW SE NE sec. 15-46n-64w. Spdg. (first report).
Updike Bros. No. 6, CSL NE SW sec. 25-46n-64w. Spdg.
John Brorphy No. 1 George, SW SE NW sec. 26-48n-64w. T.D. 2,080 ft.; fsg.

Government Lease Sale

At a government sale of leases the Ohio, Argo, and Continental Oil companies made a joint bid of $10,400 on Unit 3, consisting of 40 acres in the NW SW section 8-35n-65w. William F. Hewitt bid $13,500 for Unit 2, consisting of 40 acres in the SW SW section 4-35n-65w; and George F. Guy bid $2,087 for Unit 1, 40 acres in section 2-35-65.

MONTANA

Carbon County

R. C. Tarrant No. 1, 500 ft. W of C sec. 3-6s-18e. T.D. 1,860 ft.; W.O. 10-in.
R. C. Tarrant No. 2 Heare, NW SE NW sec. 14-6s-19e. S.D. 1,780 ft.; chg. to rot.
Sha-Wa Pet. Co. No. 1 Govt., SW SW NE sec. 35-9s-23e. Drld. cmt. plug to 3,055 ft. and hole began filling with W.; pulling 8⅝-in.
Miracle Oil Co. No. 2 Govt., CWL NE SE sec. 3-6s-23e. Drlg. 2,391 ft.

Fergus County

Baughman & Singley No. 1 Skaggs, C NW SW sec. 7-15n-20e. Drlg. 650 ft.

Glacier County

There were two completions and two new operations in the Cut Bank field. The Glacier Production Co. No. 2 Eisler, SW NE SW section 5-33n-5w, swabbed 68 bbls. first 12 hours at 2,812 feet. The Moulton and Sunburst sands were at 2,607-2,747 feet, with no shale break between, and dry. The Cut Bank was at 2,767-2,806 feet.

K. D. Pardee No. 1 Drumheller, C Lot 3 (NE NW) section 2-33n-6w, a wildcat on the west side, was plugged and abandoned at 3,035 feet. There was no Sunburst sand. The Cut Bank was at 2,962-3,014 feet with a show of oil at 2,986-94 feet.

Texas Co. No. 9 Unit 6, C NW NW sec. 9-32n-5w. Loc. (first report).
Glacier Prod. Co. No. 4 Coburn, NW SE SW sec. 5-33n-5w. C.&P. (first report).
A. B. Cobb No. 1 Reagan-Jackson, SW SE NW sec. 5-32n-5w. Drlg. 190 ft.
Nadeau Bros. No. 5 Farmers State Bank, CEL SE NE sec. 17-33n-5w. T.D. 2,820 ft.; fsg.
A. B. Cobb No. 1 State, C NE NE sec. 30-37n-4w. T.D. 2,592 ft.; S.D. until spring.

Stillwater County

Indian Ter. Ill. Oil Co. No. 2 Hepp, NW NW NW sec. 25-1n-21e. R.U.R. to deepen from 3,832 ft.

Toole County

There were two completions, both dry holes after acidizing without results, and two new operations.

The Rimrock Oil Co. No. 4 Schmidt, CSL SW NW section 29-35n-3w, had the contact at 1,794 feet and drilled to 1,805 feet and acidized with 500 gallons.

The Deloraine Oil Syndicate No. 3 Solberg, SE SW NE section 29-35n-3w, stopped in the contact at 1,760 feet and was acidized twice.

Casper T. Olen No. 8 Engermoen, SW NE SW sec. 11-35n-2w. Spdg. 90 ft. (first report).
Agen Oil Co. No. 1 Goeddertz, SE SW SW sec. 23-35n-3w. Drlg. 200 ft. (first report).

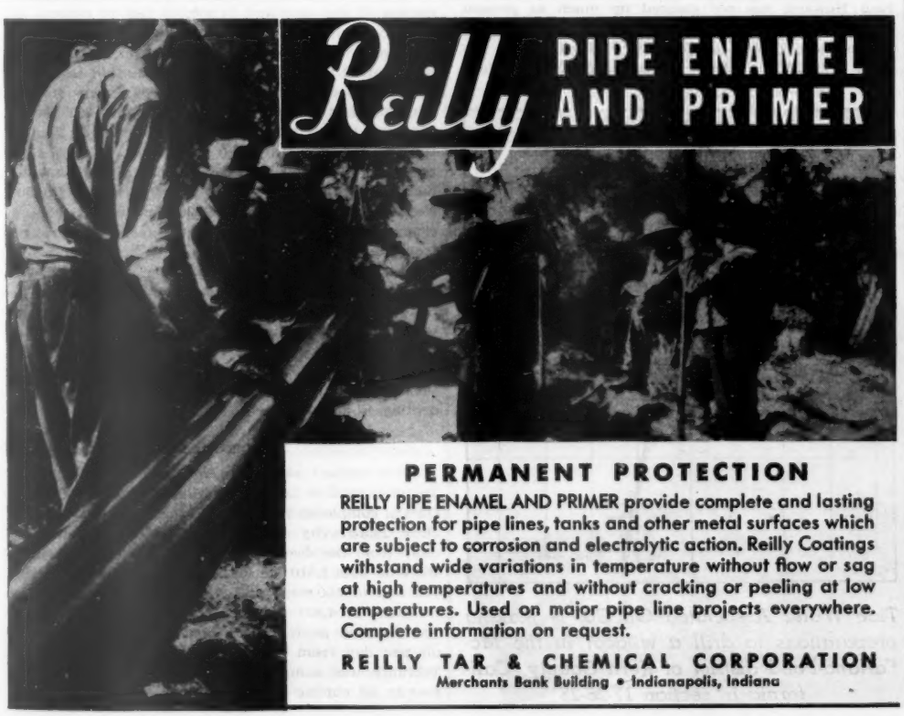
Yellowstone County

R. C. Tarrant No. 3 Sayre, SE NE SW section 26-3s-24e, in the Mosser pool, was completed in the Dakota at around 1,000 feet for 40 bbls. per day. It is a southwest offset to No. 1 Sayre, a small well and a south offset to No. 2 Sayre, which was abandoned.

NORTH DAKOTA

Williams County

California Co. No. 1 Kamp, C NW NE sec. 3-154n-96w T.D. 8,067 ft.; fsg.



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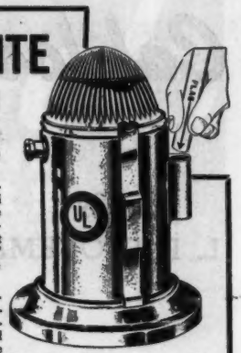

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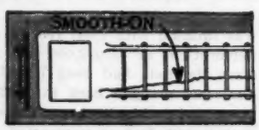

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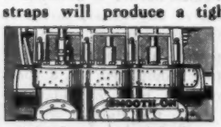

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California Field Report

By
L. P. STOCKMAN

Union Pacific Railroad Co. Completes 8,264-Bbl. Well

LOS ANGELES, Calif., May 30.—The Wilmington field continued to head the completion list in California as the result of the completion of nine new wells that registered an aggregate initial daily production of 19,627 bbls. Richfield Oil Corp., which is pursuing an aggressive exploitation program, accounted for six of the nine wells and 10,454 bbls. of the new production listed. On the Pacific Dock lease, Richfield Oil Corp. completed No. 2 flowing 2,830 bbls. per day; No. 3 flowing 3,292 bbls. daily; No. 11 flowing 1,410 bbls. and No. 18 flowing 338 bbls. daily. Nos. 2, 3 and 11 were completed in the Terminal zone but No. 18 Pacific Dock was finished in the Ranger zone at 3,043 feet and brought in flowing through a 22/64-inch bean. No. 2 Pacific Dock was finished with 1,693 feet of 7-inch liner carrying 60-mesh perforations at 2,580-2,875 feet, 3,110-3,226 feet, 3,265-3,336 feet, 3,351-3,385 feet, 3,486-3,656 feet, 3,681-3,832 feet and at 4,010-4,237 feet. It was cemented through perforations at 3,998 feet, 3,475 feet and at 3,100 feet and was acidized before completion. No. 3 Pacific Dock was also acidized before completion at 4,252 feet. No. 11 Pacific Dock was finished with 1,047 feet of 6⅝-inch liner carrying perforations at 2,646-2,998 feet and at 3,593-3,658 feet after the hole had been carried down to 3,845 feet and then plugged back to 3,658 feet. No. 18 Pacific Dock was finished with 337 feet of 6⅝-inch liner including 306 feet of perforated landed on bottom.

On the Proctor & Gamble property, Richfield finished its first well a few days ago when No. 1 P. & G. was brought in flowing 2,440 bbls. of clean 23.5-gravity oil per day from 3,903 feet. It was finished with a combination liner including 640 feet of 6⅝-inch landed on bottom and 680 feet of of 7-inch landed at 3,543 feet. The 6⅝-inch included perforations at 3,647-3,810 feet and at 3,840-3,900 feet and the 7-inch carried perforations at 2,902-3,198 feet and at 3,439-3,540 feet.

When Richfield Oil Corp. purchased its marine loading terminal at Los Angeles harbor a number of years ago officials did not give any consideration to the possibilities of developing commercial production of crude oil but during the early part of the current week the company successfully completed No. 3 Richfield Oil Terminal pumping 144 bbls. of relatively clean 18.4-gravity oil daily from the Ranger zone at 3,140 feet.

Union Pacific Railroad Co., owner in fee of large holdings in the Los Angeles harbor district, completed the largest well of the week when No. 73 on Terminal Island was brought in flowing 8,247 bbls. of very clean oil from the Ranger, Upper Terminal and Lower Terminal zones with bottom of the hole at 3,960 feet. It was finished with a combination 8⅝-inch and 6⅝-inch liner, the former being landed at 3,536 feet and the latter at 3,960 feet. The 412 feet of 6⅝-inch carried perforations at 3,032-3,100 feet, 3,135-3,230 feet, 3,240-3,271 feet, 3,286-3,344 feet and at 3,355-3,515 feet and the 435 feet of 6⅝-inch liner carried perforations at 3,565-3,653 feet, 3,673-3,715 feet, 3,725-3,740 feet, 3,760-3,875 feet and at 3,885-3,960 feet. The cementing points through perforations were accomplished at 3,024 feet and at 3,558 feet. Hollywood Oil Co. completed its first completion in the Wilmington field when No. 1 Baxter Lumber was finished flowing 896 bbls. of clean 21.1-gravity oil through a 24/64-inch bean from the Ranger and Upper Terminal zones This new well was bottomed at 3,424 feet but was subsequently plugged back to 3,390 feet. Caleb Oil Co. No. 1 F. H. proved to be a small pumper upon completion at 3,650 feet as it was only good for 30 bbls. of 15.9-gravity oil per day on the beam from the Ranger zone.

Montebello

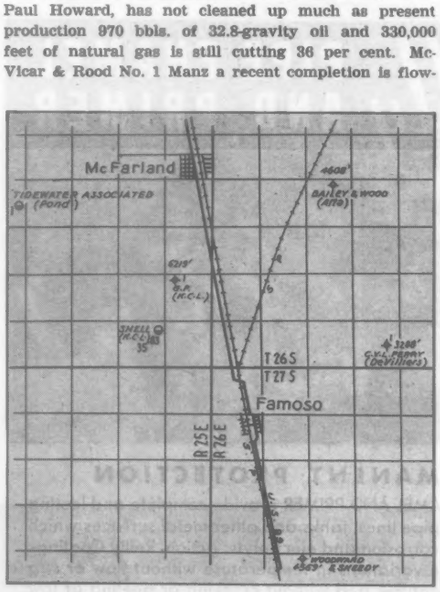
St. Helens Petroleum Co. which proved the lower part of the Pliocene and upper part of the Miocene highly productive in the extreme western end of the Montebello structure, should have another well ready for a production test within 10 days. Heretofore this company has centered its attention to the west of the deep zone discovery well but by spudding in No. 2 Eggleston east of the discovery the company is now drilling on both sides of the initial deep well. No. 2 Eggleston is a north offset of Union Oil Co. No. 1 Wilcox which was completed late in the week flowing 1,080 bbls. of 33.9-gravity oil and 350,000 feet of natural gas per day from the Miocene at 6,248 feet. The Union's previous completion in this area, No. 1 Paul Howard, has not cleaned up much as present production 970 bbls. of 32.8-gravity oil and 330,000 feet of natural gas is still cutting 36 per cent. McVicar & Rood No. 1 Manz a recent completion is flowing 1,980 bbls. of 34.5-gravity oil from the upper Pliocene with bottom at 5,780 feet and appears to be holding up in good shape. A new rig for No. 2 Manz is already in course of construction. Standard Oil Co. should get its first deep zone well in this area within two weeks as its No. 2 Harvey is in the pay at 5,400 feet.

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	May 20 Total this week	May 20 Daily average	May 13 Total last week	May 13 Daily average	This year to date	Same time last year
Intercoastal-domestic—						
Crude oil	62,745	7,964	.....	.....	203,139	.....
Diesel and gas oil	.....	.....	.....	.....	.....	176,726
Gasoline	66,101	9,443	118,279	16,897	1,106,158	1,299,476
Kerosene	.....	.....	.....	.....	199,453	198,231
Foreign exports—						
Crude oil	391,346	55,907	374,459	53,494	9,930,369	5,106,481
Fuel oil	190,755	27,251	137,080	19,583	3,109,614	5,376,782
Diesel and gas oil	23,304	3,329	27,908	3,987	2,138,996	2,669,014
Gasoline	77,305	11,044	206,301	29,472	2,623,442	2,647,227
Kerosene	.....	.....	67,411	9,630	499,574	904,343
Other unfinished oil	.....	.....	.....	.....	.....	402,700
Coastwise-domestic—						
Crude oil	147,681	21,097	90,949	12,992	4,580,668	2,595,029
Fuel oil	160,379	22,911	97,557	13,937	4,333,374	5,738,383
Diesel and gas oil	.....	.....	7,482	1,069	642,206	969,628
Gasoline	120,213	17,173	255,769	36,538	5,686,620	4,999,398
Kerosene	.....	.....	12,243	1,749	118,286	69,559

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Diesel and gas oil	.....	.....	.....	.....	178,662	152,932
Gasoline	.....	.....	.....	.....	9,499	25,778
Asphalt	.....	.....	71,982	10,283	284,401	65,790
Lubricants	.....	.....	.....	.....	3,009	9,847
Foreign exports—						
Crude oil	147,778	21,111	181,783	25,969	2,305,476	1,129,153
Fuel oil	.....	.....	133,416	19,059	832,223	705,303
Diesel and gas oil	41,094	5,871	70,214	10,031	640,602	1,070,507
Gasoline	.....	.....	.....	.....	1,676,440	2,425,646
Kerosene	.....	.....	.....	.....	301,247	301,637
Lubricants	28,498	4,071	1,186	169	177,971	263,364
Coastwise-domestic—						
Fuel oil	143,740	20,534	112,413	16,059	2,530,663	2,396,310
Diesel and gas oil	36,492	5,213	28,019	4,003	619,868	280,247
Gasoline	30,121	4,303	131,589	18,798	2,363,112	1,736,390
Kerosene	.....	.....	.....	.....	257,363	72,094



Tide Water Associated Oil Co. is making preparations to drill a wildcat in the McFarland-Pond district of Kern County, California in section 17-26-25

North Belridge

Two wells were completed in the North Belridge field of Kern County. Belridge Oil Co. No. 27-6 in section 27-27-20 flowed 668 bbls. of 34.8-gravity oil cutting 10 per cent and 14,600,000 feet of natural gas per day from the Wagonwheel zone at 8,400 feet. This new well, which has been pinched back since completion, flowed through a 96/64-inch bean, but the orifice has since been reduced to 26/64-inch. It was finished with 431 feet of 4½-inch liner including 391 feet of 250-mesh landed on bottom and 8,382 feet of 2½-inch tubing. Rig has just been finished for No. 27-13 in section 27-27-20 and Belridge Oil Co. will begin making hole within another week. The Texas Co. finished No. 3 Martin in section 22-27-20, flowing 725 bbls. of clean 23.9-gravity oil and 8,000,000 feet of natural gas from the Wagonwheel zone at a depth of 8,435 feet. It was finished with a 7-inch water string landed at 8,148 feet and 321 feet of 4½-inch liner including 190 feet of perforated. Initial production was flowing through two 26/64-inch beans with the pressure on tubing at 900 pounds and on the casing at 1,000 pounds. No additional completions are expected in this field for 30 days as the deepest of the wells now drilling is at 6,730 feet.

Torrance

Four upper zone wells were recompleted in the Torrance field of Los Angeles Basin. Imperial Gypsum Oil Co. completed No. 1 De Witt, flowing 290 bbls. of clean 26.8-gravity oil and 240,000 feet of natural gas daily from the deep zone at 5,004 feet after finishing the hole with 1,510 feet of 5½-inch liner which carried 113 feet of 100-mesh and was cemented through perforations at 4,892 feet. C. W. Camp No. 12 Perkins was finished pumping 255 bbls. of clean 27.1-gravity oil per day from 5,016 feet. R. K. Wilson No. 4-1 Torrance was completed, pumping 212 bbls. of 26.9-gravity oil cutting 14 per cent from 4,987 feet. Marel

Oil Co. No. 1 Leaver finished at 5,025 feet with 1,650 feet of 5¾-inch liner including 43 feet of perforated was completed pumping 180 bbls. of 24.5-gravity oil daily but the output was still cutting 40 per cent several days after completion indicating that the water problem had not been solved. Preparations were being made at eight upper zone wells to deepen them to the lower horizon. The deepening of these old wells in many cases changes a loss into an asset and in the case of a well producing in the upper zone a deepening job changes a well making around 25 bbls. per day to a well capable of producing about 200 bbls. daily with a coincident change in gravity from 15 degrees to 27 degrees in the lower zone. The cost of deepening a well from the upper to the lower zone has been averaging $16,000.

Natural Gas Wells

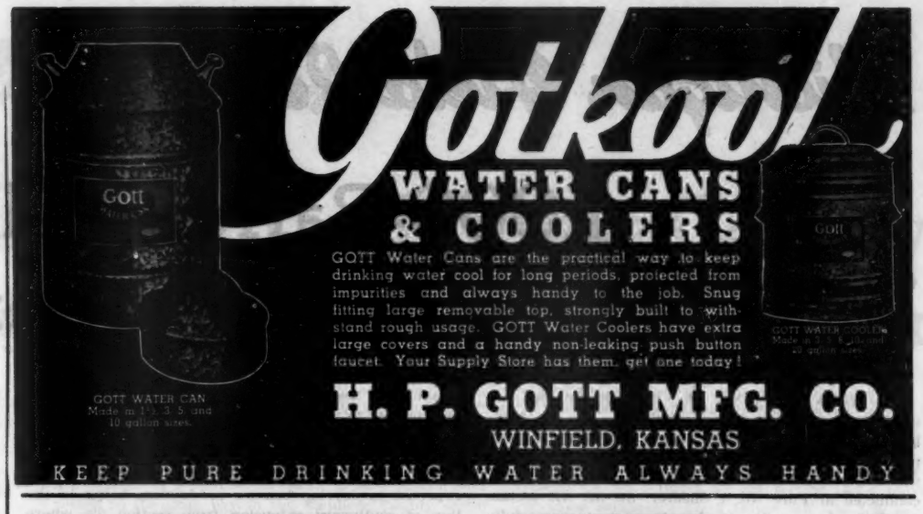
Amerada Petroleum Corp. has completed another natural gas well in the Rio Vista gas field of Solano County but in doing so appears to have defined the limits of the productive area of the field. The new producer which was completed flowing 3,000,000 feet of natural gas per day from 4,397 feet was No. 2 Sacramento & San Joaquin in section 18-4-3. Heretofore gas wells in this field have averaged around 40,000,000 feet of dry natural gas per day from the productive zone. In the Potrero Hills district of Solano County, Richfield Oil Corp. is held up with a fishing job resulting from the blowout of its No. 1 Potrero Hills in section 10-4-1 a few weeks ago. This well blew out while the crew was withdrawing a wire line core from a depth of 3,250 feet and the crew is now fishing for 1,400 feet of drill pipe in the bottom of the hole. Ohio Oil Co. is nearing the depth at which commercial production of dry natural gas is expected to be found in the Willows district of Glenn County and the potentiality of this area should be determined within another two or three weeks. Ohio's initial wildcat in this area blew out several weeks ago and totally destroyed the hole and all equipment. In Sacramento County east of the Rio Vista gas field, the Texas Co. is preparing to drill a test on several hundred acres of land which the company purchased from Midlands Land Co. in section 13-19-5.

Coastal Area

Shell Oil Co. completed an excellent well in the Ventura Avenue field when No. 94 Taylor was brought in flowing 1,214 bbls. of very clean 29.9-gravity oil and 958,000 feet of natural gas per day from 8,797 feet. This new well was completed with 945 feet of 4¾-inch liner which carried perforations at 7,881-8,225 feet, 8,555-8,663 feet and at 8,686-8,737 feet and was landed at 8,787 feet. General Petroleum Corp. is having considerable trouble with No. 13 Notten as it has again tested wet and will require further work. The well is bottomed at 9,871 feet but has been plugged back by stages to 8,948 feet and is at present standing cemented through perforations at 8,568 feet. Continental Oil Co. after a delay of several months is making preparations to drill a new well in the eastern end of the San Miguelito field of Ventura County and this well, No. 1 Grubb, should get under way within another 15 days. In the Hopper Canyon district of Ventura County, Continental passed through a fault zone and entered the Pliocene at about 4,120 feet. It is the present intention to plug the hole back and test out some upper showings before deciding the future status of the hole. In the South Mountain field which is controlled by the Texas Co., No. 5 Yale Richardson of the controlling company is rotating ahead in the Sespe formation which at present is a gray sand at 4,960 feet.

In the Capitan field of Santa Barbara County, General Petroleum Corp. has completed another commercial producer on the Erburu property in section 32-5-30 pumping 135 bbls. of clean 22.9-gravity oil per day from 1,340 feet. This well which topped the Vaqueros at 1,254 feet was No. 18 Erburu. Barnsdall Oil Co., first operator to develop commercial production in the Gato Ridge field of Santa Barbara County, is making preparations to drill two additional wells, No. 5 Magenheimer and No. 3 Tognazzini both in section 9-8-32. In the Santa Maria Valley field, Union Oil Co. has completed No. 3 Bradley Lands in section 25-10-34 pumping 825 bbls. of relatively clean 15.5-gravity oil daily from 5,115 feet. This well is located in the southern part of the original productive area and over on the west side of the field in section 21-10-34 the company has just completed No. 2-2 O'Donnell as a pumping well from a depth of 5,240 feet. The

(Continued on Page 113)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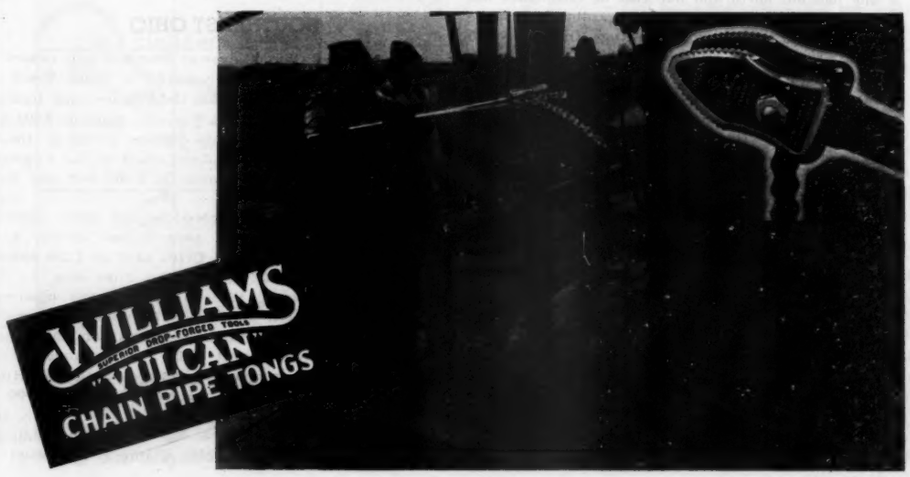


Michigan Field Report

By O. C. PRESSPRICH

1,000-Barrel Well in Allegan; One Multiple-Sand Producer

SAGINAW, Mich., May 30.—Pure Oil Co. has successfully accomplished an experiment, new to Michigan oil fields, which has resulted in a single oil well producing from four separate pay horizons—two in the Traverse, two in the Dundee. The experiment, conducted at Pure No. 1 Shearer, SE SE NE section 26-19n-3e, Arenac County, has been used successfully in other petroleum fields—the "teacup gun."

The Pure project was drilled as a Traverse producer, like other wells in the Arenac-Adams field. Unsatisfactory production from the Traverse, although two pay zones were penetrated, led to the decision to deepen to the Dundee. The Traverse pay was cased off and drilling proceeded. Two pays also were logged in the Dundee, one near the top, the other about 150 feet down. The test flowed at about 50 bbls. daily for a time, then decreased to about 35 bbls., with further decline expected. Decision was then made to penetrate the casing at the Traverse levels, where pay had been cased off, to get both Traverse and Dundee production. The well is now gauging better than 100 bbls. daily, and is reputed the largest producer in the pool, besides being the only well in Michigan flowing simultaneously from four distinct pay zones.

Two successful oil wells and a gasser focused attention on the Edenville and Buckeye oil pools and Clare County's new Grant Township gas field—which also brought in an oil well in an extended gas test—in a week which revealed 10 scattered fields in Michigan adding to their daily potentials.

Three developments were out of the ordinary—Mammoth Producing & Refining Co.'s addition of an estimated 1,000-bbl. producer to the Edenville pool in Midland County; addition of an extreme western outpost wildcat to the south Buckeye pool, estimated at 500 bbls. daily, and a confirmation gas test of the American Production Co. in Clare County's Grant Township field, reported at 8,500,000 feet. The Grant gas field also supplied a 35-bbl. oil well, intended as a gas test. This was a direct opposite to Gulf Refining Co.'s nearby discovery well in the area, intended as an oil test but completed as a 14,000,000-foot gasser. The oil well was James A. McKay No. 1 Loveless, SE NE NW section 35.

The Edenville oil well which topped other production of the week was Mammoth No. 4 Higgins, SE NW NE section 27-16n-1w, estimated at 1,000 bbls., although pinched down to 300 bbls. daily because of lack of storage. The test was scheduled for acid treatment soon, and while having fallen off from initial production was flowing easily under curb. The test is one location north and one east of Chapman's discovery, so it furnished little data regarding boundaries or possibilities of the area. Fortney Oil Co. No. 1 Corning Estate, NW NE NE section 26-16n-1w, a northeast extension wildcat, which a week earlier appeared dry, was definitely confirmed as such and will be abandoned. Mammoth No. 2-A Rickett, SE SE NW section 27, was reported ready to drill in this week, and was expected to furnish valuable information on the eastern sector of the Edenville district.

Another outpost failure was logged in Edenville the past week, but was so far away from the center of production at present that it proved nothing as to the territory between. It was Clarence E. Larson No. 1 Warren, NE SW SE section 30-16n-1w, nearly 3 miles west of the present center of activity. The test drilled to 3,950 feet, where Dundee water was encountered.

Buckeye gained the spotlight for the first time in several weeks with a producer extending the south (Oard) pool westward. It was F. O. Whitlow No. 1 Campbell, NE NW SE section 27-18n-1w, estimated at 500 bbls. daily after acid, under curb after a flow of 50 bbls. hourly for the first several hours. The well was one of the best brought in recently in the area, and opens up several locations west of proved production in the field. To the east, Rex Oil & Gas Co. No. 2 Bueker, SE SE SW section 26-18n-1w, came in at 50 bbls. daily after acid. Te Rex-Beuker had been expected to develop heavier production, being in the line of southward extension from section 33, where favorable producers have been found.

Gladwin County—Bentley Township

While several tests are drilling near the pay zone in Bentley, the only completion of the past week was McClanahan Oil Co. No. 1-A State, SW SE SW section 35-17n-2e, dry in the Dundee.

Allegan County—Monterey Township

Slackened development was apparent in the Allegan field, with one favorable producer and a dry test, the results of the past week's drilling. The well was W. E. Ross No. 1 Skinner, NE NW NE section 17-3n-13w, a 200-bbl. producer after acid. The dry hole was J. V. Wicklund Development Co. No. 2-L State, SE NE SE section 5-3n-13w. The same area yielded three dry tests the previous week.

Ogemaw County—Ogemaw Township

M. J. Ingold No. 3 Stevensen, SW SW NE section 24-22n-1e, developed as a 50-bbl. well after an acid treatment. One other test is drilling in section 24.

West Branch Township

Newell & Woughter No. 2 Poole, SE NE SE section 36-22n-2e, southeast extension test in the West

(Continued on Page 113)

Galey and Others Start Deep Test in Beaver County, Pa.

By STAFF CORRESPONDENT

PITTSBURGH, Pa., May 30.—Another Oriskany test is starting in Beaver County, Southwest Pennsylvania where John T. Galey and others are hauling in material to the Eliza Allen heirs in South Beaver Township. It is approximately 2,600 feet south, a few degrees west of this operator's Oriskany gasser on the James Tennis heirs farm.

In this township, three Oriskany gas wells have been completed by these operators located on the Graham (Calvin), Weigle, and Tennis farms, each a good commercial well. On the James Smith farm, the T. W. Phillips Gas & Oil Co. has probably the largest Oriskany gas well in this area. One other test in the township, on the Beaver Falls Airport lease, struck salt water in the Oriskany. The Oriskany sand is about 4,600 feet deep.

Only 13 operations were completed in the Lower Eastern fields during the week of which 1 was dry, 9 gas wells, and 3 producers with an initial daily production of 15 bbls. Southeast Ohio led in completions.

SOUTHEAST OHIO

In Southeast Ohio, Ridgeway Brothers and others on the Bruce Hobbs farm in section 4, Union Township, Knox County, drilled into the Clinton sand, total depth 2,807 feet, and have a gas well gauging 2,500,000 feet a day. In the same quarter township, the Clermont Oil & Gas Co. completed a test on the Virgie Wonders farm in this formation at 2,807 feet and it gauged 1,000,000 feet a day.

In Athens County, L. B. McCune and others completed No. 3 Floyd Dixon, near Fisher, section 1, Waterloo Township, in First Berea sand at 1,208 feet and it produced 4 bbls. the first day after shot.

In Licking County, William Stricker and others completed a gas well on the E. H. Davis farm, section 8, Mary Ann Township, in Berea sand at 750 feet. It gauged 150,000 feet a day. In the same section, this operator completed a gasser on the W. H. Miller farm, total depth 790 feet and it gauged 70,000 feet a day.

In Meigs County, section 12, Sutton Township, Joseph Thorn drilled a dry hole on the J. E. Stabart farm through the Cow Run sand to 545 feet.

In Washington County, E. F. Montgomery completed a small producer, No. 3 Charles F. Gross, Lot 37, Salem Township, in Macksburg 700 Foot sand at 918 feet. It produced ¼ bbl. the first day before shot.

In Trumbull County, Norwood P. Johnston and others are shut down at 3,800 feet running 7-inch casing on the G. M. Porter farm west of the crossroads at Mecca in Mecca Township.

In Coshocton County, the Wittmer Oil & Gas Properties are drilling at 3,900 feet on the S. P. Balder farm, Lot 30, northeast quarter of Crawford Township.

SOUTHWEST PENNSYLVANIA

In North Strabane Township, Washington County, Pennsylvania, Beedle and Debone reached the Fifth sand at 2,130 feet on the John Arblaster farm and it filled up 1,500 feet with oil. After the shot, it bridged over and no estimate of its production was made.

In South Strabane Township, Penn Ohio Oil & Gas Co. started drilling on the W. E. Davis farm. In Hanover Township, K. Aten & Co. had reached 425 feet on the Lee Devill farm. In Donegal Township, Heidlemeir and others are drilling at 974 feet on the J. M. McMurray farm.

In Amwell Township, Washington County, Union Gasoline & Oil Corp. is drilling at 200 feet in No. 814, Leroy Vankirk farm. Wise Oil & Gas Co. is rigging up to deepen the test on the Ensley Kelsey farm.

In Peters Township, Washington County, Carnegie Natural Gas Co. is down 2,330 feet deepening, on the J. N. Guthrie farm. In Morris Township, the Union Gasoline & Oil Co. is drilling at 2,275 feet in No. 4 Craft, with the Big Injun sand at 1,834-2,140 feet; show gas at 1,845 feet; 600,000 feet of gas at 1,946-49 feet, which blew down to 197,000 feet a day.

Greene County

In Jefferson Township, Greene County, Equitable Gas Co. is moving in a rig to deepen No. 1 F. Allman, starting at 2,181 feet. In Greene Township, this company has rigged up to deepen No. 1 S. G. Durr. In

(Continued on Page 109)

Oklahoma Operations

By DAL DALRYMPLE

Gas Found in Murray County; Logan County Well Blows In

Oklahoma wildcats continued to perform on a wide stage the past week, with a prospective Logan County pool opener assuming the leading role as it blew in at the week-end. Other recent wildcat strikes in Murray, Cleveland and Payne counties continued to perform more or less satisfactorily.

The Logan County wildcat, Sinclair Prairie Oil Co. No. 1 Crews, SW SW NE section 27-16-1e, near Meridian, blew a stream of gas, oil and mud over the derrick last Saturday morning, after bailing for more than 12 hours. The bailer had been run to near bottom and was being withdrawn when the wildcat went into action. When opened late Saturday, after a control head had been installed, the well produced gas for four minutes, then tanked 22 bbls. of oil in eight minutes and followed with a 15-minute flow of gas before being shut in. Oil was reported standing within 900 feet of the top, with gas apparently insufficient to produce it naturally through casing. Completion test will be made after the hole is cleaned out, tubing run and tankage erected. Wilcox sand was topped at 5,193 feet, total depth 5,215 feet. Nine-inch casing was set at 5,147 feet.

W. A. Delaney and others No. 1 Bugher, SE SE SW section 12-7n-2w, Wilcox sand pool opener near Noble in Cleveland County, flowed 60 to 100 bbls. of oil and 16 to 40 bbls. of salt water an hour when tested several times the past week. On one test it flowed 644 bbls. of oil and 210 bbls. of water in 10 hours. Gravity of the oil was 39 degrees. Source of the water had not been determined. Second Wilcox sand was topped at 7,670 feet and the hole was bottomed at 7,682 feet. Seven-inch casing was set at 7,445 feet.

Wildcat Failures

B. F. Lundy and others No. 1 Oxford, NE NE SW section 26-1s-4w, wildcat in Stephens County, topped County Line lime at 2,855 feet, had dry sand series beginning at 3,167 feet, and was dry and abandoned at 4,204 feet, total depth, in Deese formation.

J. Ben Russell and R. Ray No. 1 Hasley, NW NE NW section 4-1s-19w, an old Tillman County wildcat, was deepened from 2,754 feet to 3,465 feet, nothing was showing and it was abandoned.

C. W. Jones No. 1 Henderson, NW NW NE section 4-5-3e, was location for a wildcat southwest of the West Asher pool in southern Pottawatomie County.

Payne County Wildcats

Operators were awaiting connections at Texas Co. No. 1 Longan, C W half NW NW section 12-17-1e, pool opener 5 miles southwest of the Ramsey pool in Payne County. It was showing for about 1,000 bbls. of oil daily, after plugging back from total depth of 5,006 feet.

In eastern Payne County and north of Cushing, R. L. Kemp and others No. 1 Rafferty, SE SE NE section 6-18-5, was estimated good for 100 to 300 bbls. of oil daily. Operators were cleaning out preparatory to testing. First Wilcox sand was found at 3,665-75½ feet, second Wilcox sand at 3,676-3,705 feet, total depth. It made several head flows and gas was estimated at 5,000,000 feet daily, following a shot.

Southern Oklahoma shared in the interest with the opening of a gas pool in Murray County, at Gilbreath & Dutton No. 1 Wolf, C SE SW section 8-1n-2e, wildcat 5 miles north of Davis. After shooting at 2,229-35 feet and 2,245-62 feet, it produced 35,334,000 feet of dry gas daily and was shut in. It had 940 pounds rock pressure. It found Bromide at 2,247 feet, Wilcox sand 2,398 feet and was bottomed at 2,522 feet.

Several wells drilling to the deep pay zones in the Fox and Milroy areas of Carter County were nearing completion.

Carter Oil Co. No. 1 Carter-Harley, C NW NW section 19-2s-3w, Carter County sector of the Milroy pool, was bottomed at 8,280 feet. Seven-inch casing was set at 8,180 feet, and it may be several days before plugs are drilled. It is east of an oolitic lime producer completed in the deep pay in the Stephens County sector of the Milroy field several months ago. Four deep tests were being drilled ahead in the Fox pool, Carter County.

Drilling was delayed at Barnsdall Oil Co. No. 1 State, C NW SE section 35-5n-5ecm, wildcat in Cimarron County, Oklahoma Panhandle, while operators endeavored to regain circulation lost at 4,800 feet.

Lincoln County

E. W. Jones and others No. 1 Thomas, NE NW NW section 2-14-2e, North Wellston area, Lincoln County, topped sandy Dolomite at 5,045 feet, had Wilcox sand at 5,067 feet, was bottomed at 5,089 feet, and flowed 205 bbls. of oil in 24 hours, with 2,000,000 feet of gas, completed.

Oklahoma County

Indian Territory Illuminating Oil Co. No. 9 Bodine, SE NE SE section 24-11-3w, Oklahoma City field, Oklahoma County, found Fortson sand at 2,980 feet, total depth 2,991 feet, swabbed and flowed 417 bbls. of oil in 24 hours and was completed.

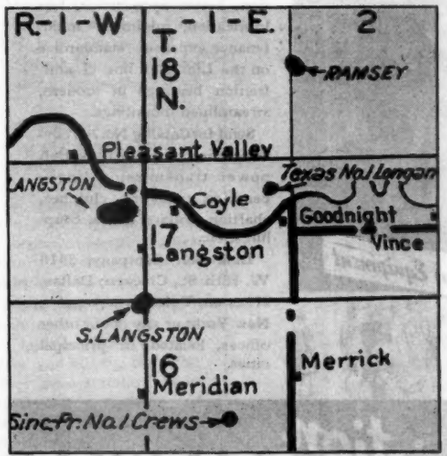
Seminole County

Two new tests in Seminole County were reported. Troup & Moore No. 1 well in NW SE SW section 27-6-5, was a location. Thompson Brothers No. 1-A Lack, SW NW SE section 27-7-6, was a cellar.

Pottawatomie County

Elbar Oil Corp. No. 1 Wyatt, NE NW NW section 10-7-4, an old well in the St. Louis field, Pottawatomie County, was plugged back from 4,375 feet to 3,600 feet, perforated casing at 3,480-3,500 feet and pumped 5 bbls. of oil daily, recompleted. It previously had been deepened from 3,945 feet to 4,375 feet.

Magnolia Petroleum Co. No. 7 Billington, SE NE NW section 22-7-4, an old well, was dry and abandoned at 4,255 feet, after perforating casing at 3,175-3,233 feet and 3,145-3,174 feet, without results.



E. C. Jacobson, Maps, Tulsa

Two recent Oklahoma strikes, Texas Co. No. 1 Longan in Payne County, and Sinclair Prairie No. 1 Crews in Logan County, are south and slightly west of the Ramsey pool

New work in Pottawatomie County: Ross Oil Co. No. 2 Caudle, SW cor. section 13-7-4, location; Magnolia Petroleum Co. No. 9 Banta, SE cor. section 14-7-4, building rig; same company's No. 5 Hilton, SE NW NW section 22-7-4, moving in tools.

Estimated Daily Production

Estimated daily production for Oklahoma for the week ending May 28, and for the preceding week, was as follows:

	Barrels	
	May 28	May 21
Allen	6,250	5,525
Billings	4,850	6,450
Burbank	7,375	7,450
South Burbank	9,750	10,250
Balance Osage	18,100	18,250
Blackwell district	4,725	4,700
Bristow-Slick	7,075	7,025
Chandler	2,125	2,150
Crescent	3,750	6,350
Cromwell	3,150	3,100
Cushing-Shamrock	10,550	10,700
Duncan district	3,525	3,725
Edmond	5,625	7,125
Fish	3,525	3,775
Fitts	42,225	48,675
Jesse	3,050	2,750
Graham	4,750	5,025
Gray	950	975
Healdton	9,300	9,250
Hewitt	4,050	4,075
Keokuk	4,325	4,650
Konawa	1,250	1,525
Lucien	7,675	10,775
Moore	3,250	4,900
Oklahoma City	92,050	103,200
Olympic	5,625	5,875
Ramsey	1,150	950
Sasakwa	1,325	1,725
Sholem-Alechem	2,850	2,875
Seminole district:		
Bowlegs	8,275	8,975
Carr City	3,325	3,575
Dora	4,775	5,325
Earlsboro	4,950	4,975
South Earlsboro	450	550
East Earlsboro	5,175	5,225
Little River	7,525	7,475
East Little River	875	900
Maud	600	725
Mission	1,475	1,675
Seminole	7,750	7,850
East Seminole	1,575	1,725
Searight	2,475	2,600
Total Seminole	49,225	51,575
St. Louis-Pearson	18,750	21,250
Tatums	4,500	5,750
Tonkawa-Garber-Thomas	4,275	4,225
Wewoka	2,375	2,400
Yale-Jennings	3,775	3,825
Other pools	82,500	78,500
Total Oklahoma	439,600	471,325

Grady County

T. H. McCasland No. 1-A Hawkins, SW cor. section 5-3n-5w, Knox pool, Grady County, had Pontotoc sands at 2,590-3,609 and 2,650-2,660 feet, total depth 2,816 feet in sandy shale, and had initial production of 125 bbls. of 36-gravity oil in nine hours, completed.

Jefferson County

Rips and Ungerman No. 6 Black, SE SW NE section 16-7-5w, Oscar-Seay district, Jefferson County, had a junked hole and was abandoned at 835 feet, total depth.

Pontotoc County

Sinclair Prairie Oil Co. No. 4 Vivian, NE SW NW section 22-2n-7, an old well in the Fitts field, Pontotoc County, was deepened from 3,805 feet to 3,830 feet, acidized, pumped 10 bbls. of oil daily and was recompleted.

Continental Oil Co. No. 2 Brown, NW NW NE section 11-1n-7, an old well in the Jesse pool, flowed 7 bbls. of oil daily and was recompleted after plugging back from 4,789 feet to 4,132 feet, shooting and acidizing.

First reports of new tests in Pontotoc County: Simpson-Roodhouse and others No. 1 Illinois Life, NW NE

NW section 28-2n-6, rig; Sinclair Prairie Oil Co. No. 2-B Starritt, SE NW NE section 21-5-5, building rig; Vierson Oil & Gas Co. No. 1 Hatcher, SW NW NW section 22-5-5, location; John Dixon and others No. 1 Harrell, NW NW SE section 29-5-8, drilling below 795 feet.

Kiowa County

W. D. Wagner No. 1-A Pfenning, SE cor. section 35-7-17w, Kiowa County, topped Granite Wash at 564 feet, was bottomed at 620 feet, plugged back to 530 feet, pumped 3 bbls. of oil and 3 bbls. of water and was completed.

Fields & Nagle No. 3 Oster, SW SE SW section 27-7-17w, had machine on location.

Additional New Work

In Garvin County, Magnolia Petroleum Co. No. 2 Cowan, NW NW SW section 15-1n-3w, Robberson pool, was shut in for tankage after deepening from 1,335 feet to 1,758 feet.

In Carter County, Sinclair Prairie Oil Co. No. 31 Million & Thomas, SE cor. section 5-4s-3w, was a machine; Shell Petroleum Corp. No. 22 Johnson, NW SE SW section 4-4s-3w, had dug pits.

In Comanche County, Midnite Oil Co. No. 1 Howe, NW cor. section 20-2n-12w, wildcat, was drilling below 135 feet.

Okfuskee County

Bruin Oil Co. No. 3-A Barnett, C SE NW section 25-11-11, was a recent Okfuskee County completion. It produced 15 bbls. of oil daily at 1,926 feet, total depth. J. O. Hayes and others No. 2 Huldy Deer, SW SE NW section 28-10-11, was an abandoned location.

Okmulgee County

Recent completions in Okmulgee County were as follows: Detrick & Steckoll No. 1-A Creekmore, SW NW SE section 5-12-14, dry and abandoned at 2,200 feet. A. G. Hazlett No. 2 Fewell, C SE SW section 2-13-14, dry and abandoned at 2,046 feet, total depth. John Cable and others No. 1-A Grayson, SE SE SW section 16-13-14, produced 5 bbls. of oil daily, total depth 1,688 feet. J. L. Selby No. 7-A Doneghy, SE SE NW NE section 3-14-14, pumped 2 bbls. of oil daily, total depth 790 feet. B. K. Young, trustee, No. 1 Bruner, NW SW SE section 5-15-14, produced 3,000,000 feet of gas daily, total depth 1,562 feet. Miller and others No. 1-A Spurgeon, NW NW NE NE section 36-15-14, was dry and abandoned at 810 feet. G. B. Siebert No. 1-A Rossiter, C NE NW section 31-16-14, was dry and abandoned at 1,820 feet.

Muskogee County

A gas well recently was completed in the Jolly-Patton area, Muskogee County. It was J. R. Parks No. 2 Hildebrand, NE NW SE section 17-14-19. It produced 750,000 feet of gas daily at 647 feet, total depth.

Central West Fields

(Continued from Page 92)

No. 3 Wade, C S half NE SW section 33-4n-9e, rigging up rotary.

CENTRAL OHIO

FINDLAY, Ohio, May 30.—The deep test 6 miles northwest of Chillicothe in Ross County, Union Township, has been drilled 630 feet into the Trenton. No commercial showings have as yet been found. At present the operation is shut down at 2,582 feet, with approximately 100 feet remaining to be drilled before the St. Peter horizon will be reached. The completion record for Central Ohio follows:

In Lawrence County, Windsor Township, Petree & Newman No. 1 E. F. Brammer, section 34, is a gas well gauging 200,000 feet from the shale at 2,662 feet.

In Licking County, Eden Township, Davis No. 1 C. B. Hook, section 5, had a small showing of gas in the Clinton sand at 2,627-55 feet. It was drilled to 2,692 feet and abandoned. In Mary Ann Township, Hoover Bros. No. 2 L. B. Lahman, Lot 18, first quarter, is a small gas well from the Berea at 809 feet. In Perry Township, Vandergrift Oil Co. No. 6 Beulah Weigle, section 16, made 15 bbls. of oil the first 24 hours after a shot in the Berea at 798-804 feet.

In Lorain County, Avon Township, Ohio Fuel Gas Co. No. 1 Steve Stumphauser, section 12, is a 4,000,000-foot gas well from the Clinton sand at 2,339 feet.

In Monroe County, Franklin Township, Lumbatis No. 1 Watt Ullman, section 2, was abandoned at 1,780 feet. In Benton Township, Hanlan & Scohy No. 1 J. R. Amos, made 10 bbls. of oil the first day after a shot in first Cow Run sand at 808-22 feet.

In Meigs County, Salisbury Township, Smith No. 1 Lida Goodwin, section 32, is a gas well gauging 200,000 feet from Maxon sand at 854 feet. In Salisbury Township, Bengal No. 1 Jennie Gorsuch, section 34, was a dry hole at a depth of 1,096 feet. In Sutton Township, Thorne No. 1 J. E. Stobart, section 12, was dry in the first Cow Run at 490-91 feet.

In Noble County, Beaver Township, Chaseville Gas Co. No. 1 E. G. Gallagher, section 3, made 70,000 feet of gas from the Berea sand at 1,527 feet.

In Tuscarawas County, Lawrence Township, Ohio Fuel Gas Co. No. 1 J. S. Breitmeier, section 17, was a gas well gauging 550,000 feet from the Clinton sand at 4,618-26 feet.

In Vinton County, Clinton Township, Kelch Bros. No. 1 V. B. Heering, section 18, is a small gas well in the Hamden sand at 678 feet.

In Washington County, Barlow Township, D. T. Orndoff No. 1 Phil Roe, section 2, found the Maxon sand dry at 1,507-22 feet. In Barlow Township, Hope Natural Gas Co. No. 1 J. H. Greenlees, section 5, gauged 100,000 feet of gas from the Injun sand at 1,345-57 feet. In Grandview Township, C. D. Uhl No. 7 J. A. Huffman, section 22, made 8 bbls. of oil the first day after a shot from the first Cow Run sand at 795-808 feet. In Grandview Township, Knob Oil & Gas Co. No. 8 J. W. Pryor, section 21, was dry and abandoned at 800 feet. In Liberty Township, Otto Heldman No. 2 Marion Epler, section 19, was a 100,000-foot gas well in the Germantown sand at 1,000-40 feet.

Lima Field

No completions were reported from the Lima field, however, two new tests have started for the Trenton formation, one by the Clear Oil Co. in Wood County, Jackson Township, section 21, on the Fred Winkleman tract, the other in Sandusky County, Jackson Township, where Trenton Oil Co. is rigging up No. 2 F. W. Havens in section 15.

WESTERN KENTUCKY

OWENSBORO, Ky., May 31.—With four wells completed in the Birk City field in Henderson County, and one test shut down for orders after penetrating McClosky lime, operators are beginning to get a line on the possibilities of the new pool opened in April by the Hoosier Drilling Co. The Carter Oil Co.'s well is good for 850 bbls. after a 4,000-gallon acid treatment and W. E. Hupp and others' test is relatively small in production thus far. Snowden & McSweeney test ranks third in initial output of the four oil wells. The discovery well was good for 1,200 bbls. a day initially.

Following is the week's report of operations in the Western Kentucky fields:

Henderson County, Birk City district: Hoosier Drilling Co. No. 2 C. T. Blackwell, drilling at 1,500 feet. Carter Oil Co. No. 1 O. L. Boswell, 535 bbls., natural production, 850 bbls. after the well was acidized. W. E. Hupp and others No. 1 Mrs. Julia Gatewood, acidized with 750 gallons, later acidized with 2,200 gallons; well pumped better than 150 bbls. per day. Kentucky Natural Gas Co. No. 1 Otis Haynes, cored saturation of McClosky sand at 1,993-95 feet, back into hard lime at 1,996 feet. Snowden & McSweeney and Cumberland Petroleum Co. No. 1 T. C. Jones lease (now Francis Dempewolf), swabbed 500 bbls. per day; now on pump.

In the Reed district, Petroleum Exploration Co. No. 1 Southern Trust Co. was drilling at 1,080 feet.

Breckinridge County, Cloverport district: Flesher & Galey No. 1 J. W. White, deep test, was shut down at 1,400 feet.

Daviess County, Birk City district: Madden Oil Co. No. 1 Onis Greer, was spudding in. Globe Oil Co. and others No. 1 A. R. James Estate, was moving in. Cane Run School district: Ellis & Ashby No. 9 Noel Rhoades, drilling at 600 feet.

McLean County, South Livermore district: Matthews & Preston No. 4 Hollis Howell is a 60-bbl. completion in Jett sand at 1,127-48 feet, total depth 1,150 feet. Roy Mace and others No. 3 J. E. Howell was drilling at 300 feet. North Livermore district: The Petroleum Co. and others No. 1 W. E. Render, moving in.

Ohio County, Taffey district: Rex Pyramid Oil Co. No. 16 Scott Ambrose, moving in. Friendship Church district: A. Teller and others No. 6 Coy Medcalf, dry hole through the first break in the Mississippi lime. A. Teller and others No. 16 A. A. Whitehouse, moving in.

Kansas Fields

(Continued from Page 97)

cent completion. It made potential of 910 bbls. of oil at total depth of 3,366 feet.

Inca Production Co. No. 1 Wilson, NW NW SW section 29-23-3w, an old well, was preparing to deepen.

Sedgwick County

National Refining Co. No. 1 Wilson, NE SE SE section 36-27-2e, was a recent Sedgwick County completion. It made potential of 240 bbls. of oil at 3,110½ feet, total depth.

Same company's No. 1 Trustee, SE SE NE section 8-27-2e, was a rig. Crowe and others No. 1 Murphy, SW SW SE section 34-29-1w, was a rig.

Barber County

Olson Oil Co. and others No. 2 Nuckolls, C N half

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LINK-BELT Anti-friction BEARINGS

N half SW section 30-31-11w, Whelan area, Barber County, recently was dry and abandoned at 4,672 feet, total depth.

Greenwood County

Arthur Lyke No. 3 fee, SE NE SW section 5-24-12, Greenwood County, was estimated good for 25 bbls. of oil daily and was completed in Mississippi lime at 1,772-95 feet, total depth. It had Cottleman sand at 1,580-1,613 feet.

Kearny-Stevens Counties

Tri-County Gas Co. No. 3 Campbell, NE SE NE section 19-25-35w, Holcomb gas area, Kearny County, produced 9,000,000 feet of gas and was completed at 2,679 feet, total depth.

Kuhn Brothers No. 1 States, C SW section 20-32-38w, Hugoton field, Stevens County, was bottomed at 2,698 feet and produced 9,500,000 feet of gas.

Woodson County

Saco Oil Co. No. 8 Klick, SW cor. section 20-25-14, Woodson County, had Bartlesville sand at 1,399-1,425 feet, total depth 1,428 feet, plugged back to 1,425 feet and pumped 30 bbls. of oil daily.

Woodson County Pipe Line Co. No. 11 Winterscheid, NW SW SE section 6-24-14, Woodson County, recently was completed for 8 bbls. of oil daily at 1,714 feet, total depth.

W. C. Cohen and others No. 1 Pendlay, NW NW SW section 5-26-15, was a machine.

Cowley County

Deep Rock Oil Corp. No. 3 Cranston, NW SW NE section 30-32-6, Cowley County, had water in the hole and was dry and abandoned at 3,510 feet, total depth.

A failure of the preceding week was Mead Production Co. and others No. 2 Archer, SE NW NE section 24-30-5, dry and abandoned at 2,902 feet.

B. B. Blair No. 1 Dunlap, SW NW NE section 21-32-5, was a location.

Rooks County

Two wells recently were completed in Rooks County. Republic Natural Gas Co. No. 1 Riddler, SE SW SW section 31-10-17w, Burnett area, was bottomed at 3,602 feet and made potential of 1,953 bbls. of oil.

J. H. Leavell No. 1 Larsen, SW cor. section 1-9-17w, was dry and abandoned at 3,449 feet, total depth.

Hull & Billings No. 1 Kruse, SE cor. section 3-10-16w, was rigging up standard tools.

Gulf Coast Fields

(Continued from Page 90)

Galveston County

Dickinson field: F. W. Benson, perforated casing 8,751-59 feet, 495 bbls., quarter-inch choke. W. P. Hobby No. 1 Feeder, perforated casing 7,960-63 feet, 60 bbls., quarter-inch choke. Pure Oil Co. No. 6-B J. W. Shelor, perforated casing 7,974-79 feet, 28 bbls., one-eighth inch choke. Hitchcock field: N. W. Hunter No. 3 Stewart, perforated casing 5,131-45 feet, 279 bbls., three-sixteenths inch choke.

Chambers County

Anahuac field: Humble Oil & Refining Co. No. 1 Kimmins, 7,250 feet, abandoned. Barbers Hills field: Texas Gulf Production Co. No. 4 Winfree, perforated casing 5,564-68 feet, 58 bbls. oil, 78 per cent salt water.

Jefferson County

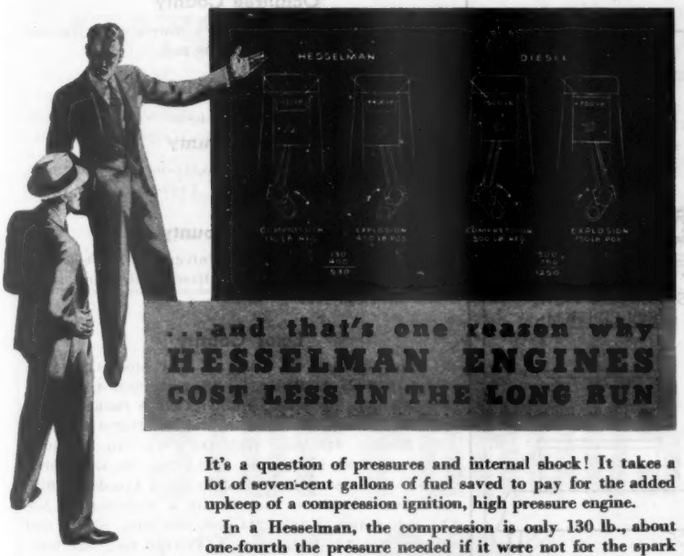
Spindletop field: Stanolind Oil & Gas Co. No. 149 W. P. H. McFaddin, perforated casing 3,245-70 feet, 362 bbls., quarter-inch choke.

Liberty County

Hankamer field: R. Olsen Oil Co. No. 3-B Ezzell, sand 2,945-58 feet, 221 bbls., quarter-inch choke.

Harris County

Fairbanks field: H. Adams No. 3 J. P. Dawson, sand 6,820-46 feet, 362 bbls., quarter-inch choke. Amerada-Stanolind Oil & Gas Co. No. 1 Bullmare, perforated casing 6,838-50 feet, 419 bbls., quarter-inch choke; No. 1 Foley, perforated casing 6,832-36 feet, 470 bbls., quarter-inch choke. Smith & Storey No. 1 E. M. White, 6,865 feet, temporarily abandoned. Friendswood field: Humble Oil & Refining Co. No. 8 E. A. Grey, sand 5,985-6,039 feet, 617 bbls., quarter-inch choke; No. 1 Port City, sand 5,945-6,042 feet, 614 bbls., quarter-inch



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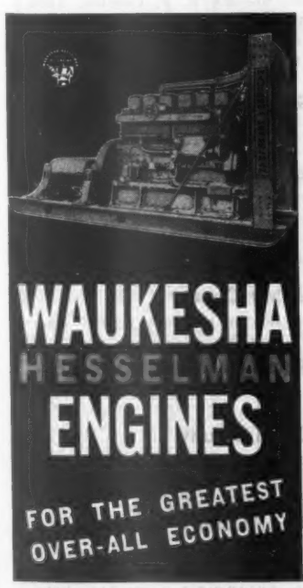
In a Hesselman, the compression is only 130 lb., about one-fourth the pressure needed if it were not for the spark plug ignition. And the Hesselman's explosion pressure of 400 lb. is *not even as high as the compression pressure in a Diesel.*



In a Diesel the total instantaneous reversal stress at top dead center — the torsional whip crack—in the crankshaft is as high as 1250 lb. *... more than twice that of the Hesselman's 530 lb.* Just picture the timing gears as the lash of such a whip.

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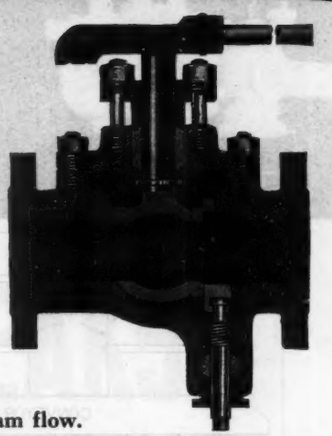

Fairbanks Sphero Ball Valves are designed for general blow-off purposes or other services where a full flow, quick opening valve is desired.

Fairbanks Sphero Valves are *different.* Instead of a wedge or disc, there is a *revolving ball plug.* When open this plug gives an opening the same size as that in the pipe. That eliminates frictional resistance to stream flow.

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We are so certain that this valve will give satisfaction that we will send one on trial with the understanding that it may be returned in 30 days if not entirely satisfactory.

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Fairbanks Sphero Valves

choke. Tomball field: Humble Oil & Refining Co. No. 3 Hegar, perforated casing 5,558-62 feet, 492 bbls., quarter-inch choke; No. 1 D. Melo, perforated casing 5,557-61 feet, 72 bbls., quarter-inch choke.

Matagorda County

Markham field: Powers Production Co. No. 6-B Meyers, 4,071 feet, 167 bbls., 5/32-inch choke. Van Vleck field: Skelly Oil Co. No. 4 G. Moore, perforated casing 8,233-39 feet, 400 bbls., three-sixteenths inch choke.

Polk County

Segno field: Humble Oil & Refining Co. No. 8-B Kirby, 7,486 feet, drill stem stuck, abandoned.

West Texas Fields

(Continued from Page 89)

and others No. 4 D. A. Ivy, 105 bbls. of oil in 24 hours after 2,000-gallon acidization at 1,935-40 feet, total depth. Unigren & Frazier No. 2 B. C. Harvey, 30 bbls. of oil in 24 hours from sand at 1,634-47 feet, shot with 20 quarts, total depth 1,713 feet. T. W. Lee and H. P. Key No. 6 Diller, 5 bbls. of oil per day from 520-28 feet, total depth.

J. G. Hammond, Inc., No. 2 T. W. Lee, 108 bbls. of oil per day from 1,039-48 feet, total depth. Loggie & Arendt No. 7 J. C. Ghio, 10 bbls. of oil per day from 589-97 feet, total depth. Roeser & Pendleton No. 49 Dawson-Conway, 38 bbls. of oil after 60-quart shot from 1,612-31 feet, total depth. C. M. Yell No. 1 M. Smalley, abandoned dry at 300 feet, total depth. Jeff Johnson No. 1 Pritchard, 7 bbls. per day, 21 per cent water, from 630 feet, total depth.

Jones County

Iron Mountain Oil Co. No. 1 C. J. Peterson, flowed 1,194 bbls. in six hours, 25 minutes after 2,000-gallon acidization at 3,196 to 3,233 feet, total depth. Sandy Ridge Oil Corp. No. 1 M. E. Connell, old well deepened, abandoned dry at 2,360 feet, total depth. Shaheen Oil Co. and Big Six No. 1 P. L. Telford, abandoned dry at 2,230 feet, total depth. Condor Petroleum Co. No. 16 Sayles, 263 bbls. of oil in 24 hours from 1,969-68 feet, total depth.

PANHANDLE COMPLETIONS

(24-hour gauges)

Carson County

British American No. 4 Block, 3,005-76 feet, 315 bbls. Magnolia Petroleum Co. No. 40 fee (244), 2,963-70 feet, 301 bbls.

Gray County

Champlin Refining Co. No. 3 Loyett, 2,932-90 feet, 558 bbls. Hagy, Harrington & Marsh No. 1 Wilson Hart, 2,430-2,667 feet, 20,922,000 feet of gas. Kewanee Oil & Gas No. 16 Morgan, 3,168-3,283 feet, 605 bbls. King Oil Co. No. 4 Baer C, 3,222-80 feet, 268 bbls. Stoleley & Savage No. 1 Beigel, 2,350-60 feet, 1,000,000 feet of gas.

Hutchinson County

Kewanee Oil & Gas Co. No. 35 Lewis, 2,918-3,025 feet, 562 bbls.; No. 36 Lewis, 3,030-90 feet, 593 bbls. Stayton Oil Co. No. 5 Moore A, 3,105-50 feet, 280 bbls. Smith Bros. No. 3 Hodges, 2,985-3,085 feet, 590 bbls. The Texas Co. No. 9 Quinn, 3,060-3,110 feet, 668 bbls.

Wheeler County

North Fork Oil Co. No. 6 Jackson, 2,190-2,210 feet, 89 bbls.

Cottle County

Wilcox Oil & Gas No. 1 Richards, abandoned.

Ochiltree County

J. R. Macon and others No. 1 Norris, 6,000,000 feet of gas from total depth of 6,274 feet.

WEST TEXAS COMPLETIONS

(24-hour gauges)

Crane County

Atlantic No. 4-A University, 3,516-56 feet, 3,522 bbls. Magnolia Petroleum Co. No. 1 University, 3,245-3,335 feet, 52 bbls.

Crockett County

Choate & Hogan No. 1-I University, 1,430-95 feet, 55 bbls. Pitzer-West No. 1-B Hoover, dry and abandoned at 2,055 feet.

Ector County

Arrow Drilling Co. No. 2 H. C. Foster, 4,135-4,275 feet, 1,186 bbls. Atlantic No. 4-F Cummins, 4,160-4,295 feet, 419 bbls. Broderick & Calvert No. 8 Parker, 4,045-4,250 feet, 2,261 bbls. Continental No. B-35-8 Rumsey, 4,200-75 feet, 444 bbls. Gulf Oil Corp. No. 94 Goldsmith, 4,127-90 feet, 2,944 bbls.; No. 96 Goldsmith, 4,118-85 feet, 280 bbls. Honolulu No. 7 Cowden, 4,077-4,180 feet, 1,199 bbls. Humble Oil & Refining Co. No. 12-C Scharbauer, 4,181-4,244 feet, 984 bbls. Skelly and Atlantic No. 3-D University, 3,545-3,640 feet, 527 bbls. Stanolind Oil & Gas Co. No. 7-A E. F. Cowden, 3,845-4,109 feet, 111 bbls.; No. 8-A E. F. Cowden, 3,982-4,169 feet, 1,334 bbls. Superior Oil No. 6 Cowden, 4,050-4,250 feet, 1,463 bbls. L. H. Wentz No. 1-G Parker, 3,993-4,126 feet, 1,023 bbls.

Gaines County

Landreth No. 1 Dalmont, dry and abandoned at 4,870 feet.

Howard County

Ajax Drilling Co. No. 2 Snyder, 2,740-3,216 feet, 60 bbls. Continental No. 5-C Chalk, 3,035-3,218 feet, 636 bbls. H. N. Harris No. 1 Guitar, abandoned location. Illinois Oil No. 7 Lane, 2,424-2,824 feet, 668 bbls.

Loving County

Carpenter & Grierson No. 1 Bennie Barnes, abandoned location.

Nolan County

Marland-Drake Drilling Co. No. 1 Wood, abandoned location.

Upton County

Acme Oil No. 3-B Shirley, abandoned location. Gulf Oil Corp. No. 30 Crier-McElroy, 2,590-2,823 feet, 1,009 bbls.

Pecos County

Arnold No. 2 Scharff-Blackmon, 1,800-35 feet, 691 bbls. British American No. 1 Cordz, 1,974-2,055 feet, 254 bbls.; No. 2 Cordz, 1,953-2,017 feet, 293 bbls. Phill Brown No. 20 Tippett, 520-31 feet, 31 bbls. E. W.

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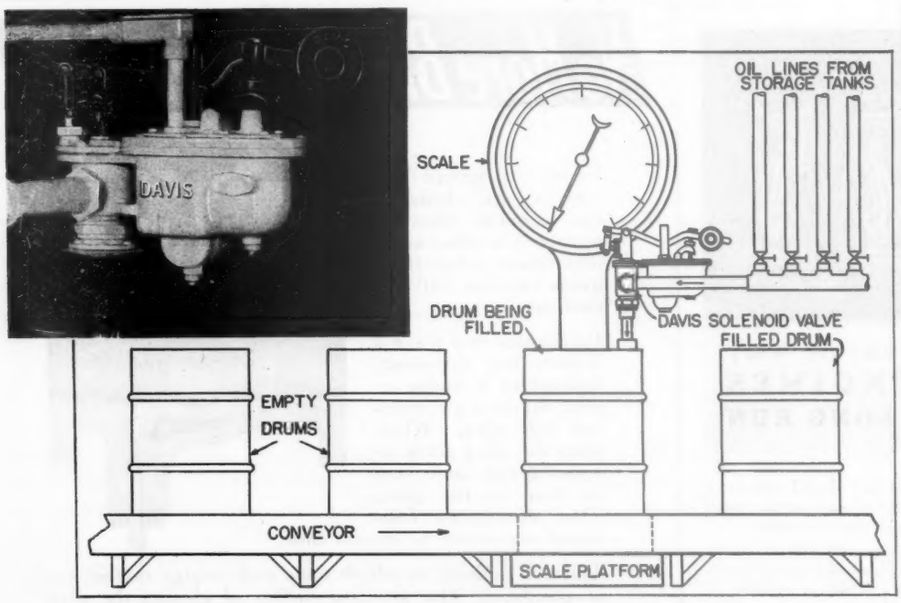
of Lubricating Oil Containers



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The above photograph shows one of the several types of Davis Solenoid Valves that are available for this class of service. Davis "Packless" transmission units are particularly recommended for handling volatile and explosive liquids. Our engineers will be glad to supply information and make recommendations for your applications. No obligation.

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Francis No. 1-A Hadden Estate, 2,978-85 feet, 15,000,000 feet of gas. Carl Leidecker No. 1 Iowa Realty Co., dry and abandoned at 2,095 feet. Town & Sanger No. 1 Jackson, 1,525-1,652 feet, 140 bbls.

Ward County

Gulf Oil Corp. No. 92 Estes, 2,530-2,940 feet.; No. 104 Hutchins, 2,550-2,750 feet, 5,237 bbls.; No. 94 O'Brien, 2,538-2,770 feet, 265 bbls.; No. 96 O'Brien, 2,495-2,765 feet, 586 bbls.

Winkler County

Falcon No. 3-A McCutcheon, 3,272-3,318 feet, 264 bbls. Humble Oil & Refining Co. No. 10-B Walton, 2,776-3,060 feet, 236 bbls. Magnolia Petroleum Co. No. 11 State-Walton, 3,190-3,270 feet, 805 bbls.

Yoakum County

Denver Producing & Refining Co. No. 4-A Whittenburg, 4,848-5,083 feet, 1,062 bbls. Gulf States No. 1 Graham, dry and abandoned at 5,375 feet.

Eastern Fields

(Continued from Page 104)

Center Township, it is down 2,660 feet deepening No. 1 C. J. Conklin, and in Franklin Township, drilling at 2,670 feet on the Jess Lapping farm. In No. 2788, C. S. Orndoff farm, water is being bailed at 2,400 feet and the hole is being cleaned out.

NORTH TEXAS COMPLETIONS

Archer County

Alexander, R. H., No. 3 W. H. Taylor, 645-69 feet, 10 bbls. Chapman & McFarlin No. 6 W. P. Ferguson, 3,800-72 feet, 1,088 bbls. Hamilton Petroleum Co. No. 5 D. C. Wilkins Estate, 1,138-45 feet, 15 bbls. W. L. Hawkins No. 8 W. R. Pace, 1,235 feet, dry. W. H. Junker No. 3 J. A. Kunkel, 1,172 feet, dry. Texas Co. No. 3 Morrison, 1,323-31 feet, 40 bbls.

Clay County

Anagos & Lyon No. 1 Henderson, 1,250 feet, dry. Brashear Drilling Co. No. 1 Hansard, 1,284-1,300 feet, 15 bbls. Bridwell Oil Co. No. 11 H. C. Edrington A, 1,436 feet, dry. M. Carmichael No. 1 R. E. Hull, 1,155 feet, dry. Healdton Oil & Gas Co. No. 1 J. J. Wallace, 5,886 feet, dry. Kimmell Lee & Co. No. 8 Mrs. Lou Firestone, abandoned location. Lesche & Gorman No. 5 L. Thornberry, 170-77 feet, 5 bbls. Metzner & Burns No. 1 L. Thornberry A, 1,081-1,119 feet, 100 bbls. E. R. Perkins No. 1 R. E. Sowden, 970 feet, dry.

Cooke County

Kerlyn Oil Co. No. 6 C. B. Blagg, Jr., 2,050 feet, dry. F. W. Merrick, Inc., No. 6 J. H. Otto, 801-98 feet, 20 bbls. Mudge Oil Co. No. 25 A. Johnson, 1,191-1,222 feet, 40 bbls. Owen M. Murray and others No. 6 Truebenbach, 903-13 feet, 30 bbls. A. D. Robinson No. 17 J. H. Otto A, 807-35 feet, 34 bbls. Schermerhorn Oil Co. No. 15 Mary Kessler, 1,314-33 feet, 30 bbls. Texas Co. No. 8 T. Truebenbach, 727-50 feet, 42 bbls. Trumter Oil Co. No. 3 Mrs. C. E. Stacey, 745-68 feet, 71 bbls.; No. 4 Mrs. C. E. Stacey, 766-91 feet, 50 bbls. Trumber Oil Co. and others No. 15 G. T. Andress, 756-71 feet, 50 bbls.

Foard County

Southerland & Wilson No. 1 G. G. Crews, abandoned location. Texas Co. No. 16 Johnson, 3,567-3,601 feet, 5,100,000 feet gas.

Jack County

B. C. Gilmore No. 4 William Hanna, 451 feet, dry. Owen M. Murray No. 5 Peterson, 327-60 feet, 10 bbls.; No. 6 Peterson, 355 feet, dry. Nelson Oil Syndicate No. 2 J. E. Henderson, 2,774-99 feet, 503 bbls. Harry J. Schafer No. 2 J. O. Hester, 2,999 feet, dry.

Montague County

Continental & Seitz No. 14 S. J. Hott, 1,748-57 feet, 180 bbls. Holcomb & Yingling No. 4 Mrs. A. B. Hinton, 760-81 feet, 10 bbls. Sinclair Prairie Oil Co. No. 1 D. T. Holt B, 1,666-81 feet, 105 bbls.; No. 3 D. T. Bolt B, 1,772 feet, dry.

Wichita County

V. A. Fisher No. 8 Fisher, 1,615 feet, dry. Bishop Oil Co. No. 1 Waggoner A, 3,735-86 feet, 881 bbls. Blackwell Oil Co. No. 4 W. L. Hodges, 3,797-3,880 feet, 960 bbls. D. H. Bolin No. 2 Waggoner, 914-29 feet, 30 bbls. Bridwell Oil Co. No. 4 Pace, 3,678-3,877 feet, 648 bbls. Burk Royalty Co. No. 2 Sue Mitchell, 3,823-73 feet, 624 bbls. A. L. Cato No. 4 J. A. Kemp, 3,680-3,768 feet, 648 bbls. Chapman & McFarlin No. 4 Mrs. Anna Mangold, 3,772-3,837 feet, 920 bbls.; No. 3 Mrs. L. Sparks and Mrs. Joe Mayfield, 3,890-3,915 feet, 552 bbls.; No. 4 Waggoner A, 3,770-3,821 feet, 1,120 bbls. Continental Oil Co. No. 1 Waggoner C, 3,769-3,830 feet, 432 bbls. Douglas Production Co. No. 21 L. P. Douglas, 908-31 feet, 5 bbls. E-C Oil Co. No. 3 Mrs. Anna Mangold, 3,785-3,840 feet, 1,104 bbls. Fain-McGaha Oil Corp. No. 5 Fain, 3,755-3,890 feet, 180 bbls.; No. 6 Fain, 3,766-3,802 feet, 832 bbls. Haberle & Thornton No. 2 First National Co. A, 3,752-3,819 feet, 480 bbls. King Oil Co. and Perkins Cullum No. 4 W. P. Ferguson, 3,689-3,799 feet, 1,800 bbls. Lewis Production Co. No. 7 Wichita National Bank, 3,650-3,860 feet, 1,120 bbls. Alex McCutchen No. 1 Waggoner, 4,024 feet, dry. Mitchell Oil Co. No. 1 Sue Mitchell, 3,897-3,945 feet, 600 bbls. Mogren & Anderson No. 5 C. A. Mertens, 926-33 feet, 200 bbls. W. H. Peckham No. 2 Waggoner, 3,742-3,868 feet, 720 bbls. Perkins & Cullum No. 17 Burnett and others A, 3,905 feet, dry. Pois & Schulz No. 15 Ed Foster J, 720-27 feet, 140 bbls. C. H. Staley No. 1 Mrs. Anna Mangold, 3,805-35 feet, 1,128 bbls. Worth Oil Co. No. 1 W. J. Logan and others A, 3,740-3,832 feet, 1,400 bbls.

Wilbarger County

Golding & Cochran No. 2 W. T. Waggoner S, 1,498-1,557 feet, 30 bbls. Lawson & Leavell No. 14 W. T. Waggoner A, 2,435-40 feet, 50 bbls. Phillips Petroleum Co. No. 203 W. T. Waggoner, 3,020-29 feet, 584 bbls. Waggoner Refining Co. No. 1 W. T. Waggoner, 1,535-45 feet, 100 bbls.

Young County

Baker & Camp No. 4 G. R. Smith, 895 feet, dry. Bennett Petroleum Co. No. 3 J. H. Robertson, 4,035 feet, dry. Duncan Holt & Marchman No. 29 S. M. J. Benson A, 879-900 feet, 100 bbls. Pemeta Oil Co. No. 27 E. P. Tatum, 698 feet, dry. E. D. Willis No. 1 J. Lowin, 519 feet, dry. T. D. Humphrey No. 1 G. W. Alberts, 3,163-3,200 feet, 50 bbls. Knox & Clay No. 2 Mrs. W. Roberston, 3,180-3,211 feet, 300 bbls. A. N. Munhall No. 1 Ed Johnston, 4,600-16, 75 bbls.

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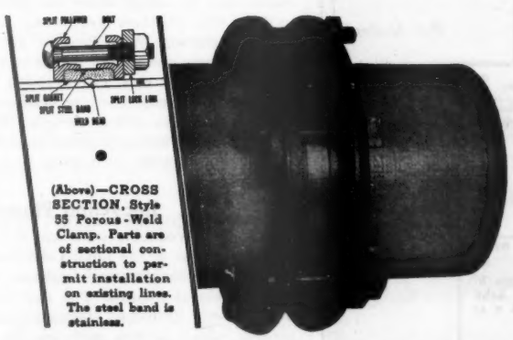

(Above)—CROSS SECTION, Style 55 Porous-Weld Clamp. Parts are of sectional construction to permit installation on existing lines. The steel band is stainless.

Porous circumferential pipe welds, and small pin-holes and leaks in pipe are quickly stopped with Dresser Style 55 Porous-Weld Clamps, without interrupting service. Repair is inexpensive, permanent, suitable for high working pressures.

DESCRIPTION. Each Style 55 Clamp consists of a few, simple "factory-made" parts (see cross section), which are quickly assembled over the leak with only one tool—a wrench.

SIZES. Style 55 Clamps are available in sizes 1¼" I.D. to 26" O.D., inclusive. (Sizes 4" I.D. and smaller have malleable followers; all other sizes, pressed-steel followers.)

HOW TO ORDER. Give: (1) quantity; (2) nominal size and outside diameter of pipe; (3) style number: (4) service—gas, water, oil, etc.; (5) maximum working pressure; and (6) outside diameter and width of weld bead.

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Style 41 Collar Clamp stops leaks through threads of screw collars; sizes 6⅝ to 12" I.D., incl.

Style 74 Screwed-Fitting Clamp is for repair of leaks through threads of screwed fittings.

Style 77 Bend Clamp stops leaks through small holes or pits in pipe.

Style 79 Type 2 Split Repair Clamp Base split in and fitted sections of pipe. Furnished also with two half-shells and straight bolts (Type 1).

Style 78 Saddle Clamp repairs leaks in pipe 6" I.D. or smaller. Two or more can be bolted together.

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North and East Texas

By
MITCHELL TUCKER

Cooke County's First Deep Oil; 20 New K.M.A. Wells

WICHITA FALLS, Tex., May 30.—First deep production for northern Cooke County in sand centered the attention the attention in North Texas last week. Sinclair Prairie Oil Co. No. 1 J. M. Best, wildcat test in the Hunt & Black Survey, Abstract 1,050, in the Delaware Bend just east of the Red River, made an electrical survey of the hole last week after it had made several heads of live green oil on a drill stem test from a 10-foot section of saturated sand at 4,887-97 feet, total depth. Casing was cemented at the close of the week in what was named the Dees formation and plug is scheduled to be drilled out next week.

This wildcat has been coring continuously from a depth of 2,765 feet. No other deep production occurs in Cooke County, the field near Meunster and east of Gainesville being classified as the Strawn series of the Pennsylvanian age.

Should expectations for this well materialize, northern Cooke County is due to have a play for deep production in the near future.

Archer County

Production possibilities of Humble Oil & Refining Co. and Fain-McGaha Oil Corp. No. 1 Fuller, second wildcat in Archer County to encounter the Ellenburger lime of Lower Ordovician age, were still unknown at the close of the week. This wildcat gave indications of a new Ordovician oil pool for the northern part of the county about two weeks ago when saturation in lime was drilled from 5,109-36 feet. Last week the well was treated with 5,000 gallons of acid, following which the fluid level rose to approximately 2,500 feet. However, during swabbing operations at the close of the week, the wire line broke and a fishing job resulted.

The test is in section 12, Block 1, H.&T.C. Survey, about 11 miles east and slightly north of the Panther pool in Archer County.

In the eastern part of the county and 1 mile east of Scotland, Adams Oil & Gas No. 1 T. Moer, section 21, Block 3, Clark & Plumb subdivision, which gave promise two weeks ago of a new deep sand oil pool for the eastern part of the county, was having trouble last week with water encroachment. The rotary has been skidded off and spudder is being rigged up for an attempt to plug off water at total depth of 4,165 feet. Previously estimated as a 50-bbl. well from sands encountered from 4,135-47 feet and 4,152-65 feet, operators plan to shoot the pay sections and make another try for production.

K.M.A. Field

The K.M.A. pool experienced last week one of the quietest periods since the start of the rapid development campaign several months ago. The vast drilling program which had spread throughout practically all of North Texas, has diminished over the past two weeks until there are now only some 20 or 25 actual drilling wells in the entire K.M.A. field. These drilling wells are mainly offsets and ones started prior to the unfavorable conditions.

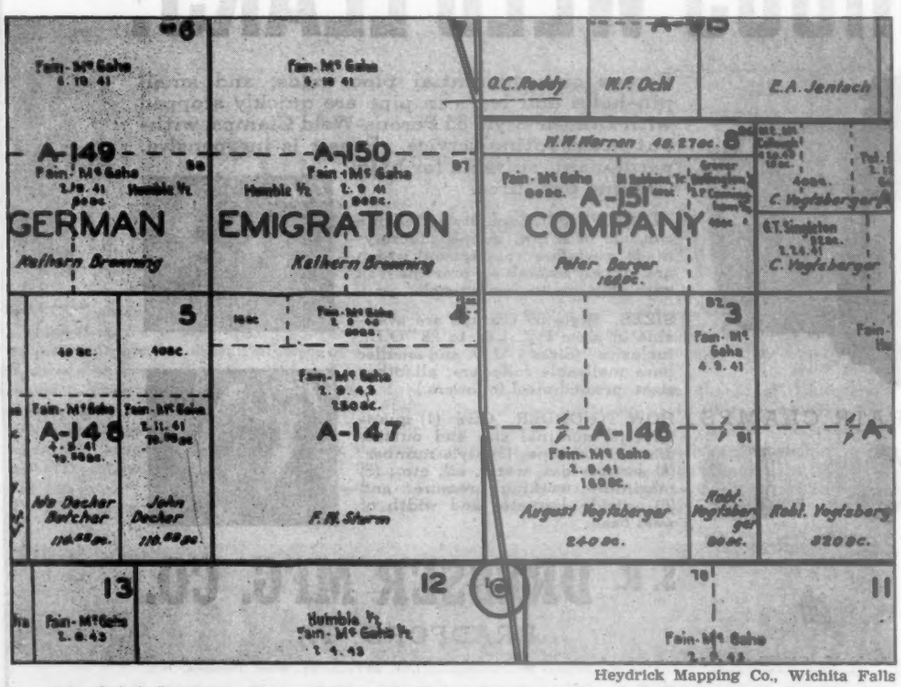
There were, however, 28 new locations staked over the past week as compared with eight the week previous.

Twenty oil wells were completed in the field last week for an aggregate initial production of 17,237 bbls. On official railroad commission survey, there are now 430 deep sand oil wells in the field with a total allowable of 22,803 bbls., less the two-day shutdown cut or a net allowable of 16,290 bbls. per day.

On the southwest edge of the K.M.A. pool, and about 1½ miles northeast of Geier Brothers & Jackson No. 1 Ancell, a dry hole, Shell Petroleum Corp. No. 1 Reilley, Floyd Jordan Survey, Abstract 167, has plugged back from 3,888 feet to 3,852 feet and is preparing to shoot with 40 quarts from 3,835-52 feet in another attempt for production. When the plug was drilled at 3,815 feet about two weeks ago the hole filled 3,000 feet with salt water.

South Wichita County received a new 4,000-foot wildcat test last week when Hanlon-Buchanan Corp. made location for No. 1 Fasset & Tuttle, 2 miles southeast of Wichita Falls. Location is on a 4,000-acre block in Block 23, Cherokee County School lands.

Continental Oil Co. has announced plans to proceed immediately with laying of gathering lines and construction of their 15,000,000-foot gasoline plant in the K.M.A. field. The company plans to include two auxiliary and one main plant in their K.M.A. system, and will provide a 2,000-horsepower compressor station (five-unit) for boosting residue gas above formation pressure and reintroduction into the reservoir as a pressure maintenance project. This is the second gasoline and recycling unit in the field, the other one having been completed several months ago by Deep Oil Development Co.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GERMAN
Kathern Browning
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EMIGRATION
Kathern Browning
A-151
COMPANY
Peter Berger
A-147
A-148
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F. M. Sturm
August Voytsberger
Rahl Voytsberger
Rahl Voytsberg
Fain-McGaha
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Survey, 2½ miles southwest of Longview in Gregg County, will drill no deeper according to reports at the close of the week. The first actual attempt at production since drilling commenced, failed last week when only mineral water was recovered on a drill stem test through perforated casing from 9,654-90 feet. This deep exploratory test passed up several showings in the higher formations and operators now plan to plug back and first test a good gas showing in the Travis Peak formation. The total depth when drilling stopped was 10,275 feet, still in the Lower Marine Trinity series.

On the Kelsey dome in Upshur County, Tom Hunter and American Liberty Oil Co. No. 1 J. P. Carter, J. H. Fields Survey, 1 mile north of Kelsey was drilling at the close of the week below 9,211 feet.

Flag Lake Field

The Texas Co. No. 1 Nolan, in the Nathan Parsons Survey extending the Flag Lake pool of northwestern Henderson County 1¾ miles to the southwest, flowed 75 bbls. of oil on a 24-hour railroad commission test through quarter-inch choke on tubing. Gas-oil ratio was 14,490 to 1. Production is from sand from 3,042-56 feet with casing set at 3,042 feet and through the main gas producing sand above 3,040 feet. This high gas-oil ratio, exceeding that of wells in the Flag Lake pool proper, compares almost with the Daily area of northwestern Houston County, where the discovery was completed for about the same ratio.

The Flag Lake pool received a 2-mile northern outpost last week when W. S. McGee and others staked No. 1 O. D. Mikeal, in the A. B. Patton Survey.

EAST CENTRAL TEXAS COMPLETIONS

(24-hour gauges)

Angelina County

J. C. Bonham No. 2 Cameron Lumber Co., dry and abandoned at 2,565 feet.

Dallas County

Markraley No. 1 R. S. Roberts, dry and abandoned at 2,636 feet.

Franklin County

In the Talco field, Humble Oil & Refining Co. No. 4-B Wims, pumped 262 bbls. in 24 hours, total depth 4,301 feet.

Henderson County

Texas Co. No. 1 I. A. Nolan, 3,038-57 feet, 75 bbls.

Houston County

Humble Oil & Refining Co. No. 1 J. Burns, 5,774-5,889 feet, 108 bbls.

McLennan County

Kilgore and others No. 1 J. M. Marrs, dry and abandoned at 1,465 feet.

Titus County

In the Talco field, Humble Oil & Refining Co. No. 8 M. Galt, 4,229-71 feet, 345 bbls.; No. 6 Pan American, 4,213-79 feet, 149 bbls.

Van Zandt County

Hines & Hancock No. 1 J. L. Chitty, dry and abandoned at 2,180 feet.

EAST TEXAS FIELD COMPLETIONS

(One-hour gauges)

Gregg County—Longview Area

Louise Carr No. 6 G. W. Richey, 3,566-70 feet, 70 bbls. Deep Rock and others No. 15 Prichard, 3,498-3,537 feet, 80 bbls. Lechner & Hubbard No. 6-B Doby, 3,466-3,514 feet, 100 bbls. Magnolia Petroleum Co. No. 10 A. J. Green, 3,591-3,618 feet, 80 bbls. Producers Investment and American Liberty No. 4 Doby, 3,486-3,508 feet, 65 bbls. Stanolind-Tide Water No. 17 J. W. Aikens, 3,528-3,631 feet, 60 bbls. Stanolind Oil & Gas No. 12 A. Castleberry, 3,590-3,604 feet, 24 bbls. Stanolind-Tide Water No. 17 H. Kee, 3,528-3,631 feet, 21 bbls.; No. 30 J. C. Persons, 3,461-3,518 feet, 21 bbls. Sun Oil Co. No. 12 G. W. Tate, 3,490-3,562 feet, 42 bbls. Tide Water No. 24 Davis, 3,526-66 feet, 96 bbls.

Gregg County—Kilgore Area

Bostex Oil No. 5 A. Spear, 3,564-66 feet, 40 bbls. Gulf Oil Corp. No. 47 A. Spear, 3,524-36 feet, 40 bbls. S. S. Laird No. 2 Effie Rice, 3,555-80 feet, 60 bbls. W. Mack No. 1 L. V. Daniels, dry and abandoned at 3,522 feet. Potter Brothers No. 2 J. N. Sparks, 3,518-30 feet, 5 bbls.

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North Louisiana, Arkansas

Discoveries and Prospects Make Up Profitable Week

By
GEORGE WEBER

SHREVEPORT, La., May 30.—Numerous important developments of the past week in the tri-state area point to a greatly increased volume of activity for several weeks to come. Included in the discoveries of the week were three new important gas-distillate prospects, final completion stages of a new South Arkansas field, new activity in the recently opened deep Blue Lake field, extensions to Lisbon and Schuler and prospective extensions in both the Holloway and Bodcaw sands of Cotton Valley.

The new South Arkansas field of Village, Columbia County, was successfully brought in late in the week by an exceptionally good completion of the Standard Oil Co. of Louisiana No. 1 Phillips, in section 15-17-19. The wildcat was carried to a total depth of 7,603 feet and 7-inch casing was set during the week at 7,517 feet. The casing was perforated at 7,420-30 feet with 100 shots, and after one hour of washing, the well began to flow without need for swabbing.

During the first hour of flow after cleaning, the well made 74 bbls. and the second hour's gauge showed an increase to 92 bbls., both through a three-eighths inch choke. The tubing pressure was 1.800 pounds and the casing pressure 1,200 pounds. The estimated gas-oil ratio while flowing was between 1,200 and 1,300 feet per barrel. The crude averaged 40.2 gravity corrected.

After flowing at the rate of 406 bbls. for the next five hours, the limited storage on the site was filled, and the well was shut in at midnight, Thursday. Shut-in casing pressure was 2,200 pounds and shut-in tubing pressure, 1,665 pounds. The discovery is of prime importance in proving another Smackover lime field in the Buckner-Schuler trend of South Arkansas. It is located about 6 miles due east of the recently discovered Magnolia field, brought in by Kerr-Lynn Oil Co.

In the Zwolle District

In the Zwolle district of Sabine Parish, new activity in developing the recently discovered deep sand near Blue Lake highlighted the week's activity. The discovery well, Sutton-Zwolle Oil Co.'s Sabine Lumber Co., located in the SE cor. NW NE section 23-7n-14w, continued to flow through the casing after blowing out two weeks ago, and subsequently being shut in to storage. The test began making heads on a three-eighths inch choke at the rate of 41 bbls. hourly, and was cut back to a quarter-inch choke, with the flow slightly decreased, and the pressure on the drill stem increased to 1,100 pounds. The test blew out while coring at 4,207 feet and the core barrel and drill stem are still in the hole.

Six new locations, all slated for early development have been staked in the field, two of which are located 1½ miles to the southwest and to the east. The active interest of a number of operators in the area presages an early test for the field. One of the offset tests has spudded, and materials are being moved in for the others.

To the north, in the Logansport area of De Soto Parish, the Hunter Co. has encountered good showings of gas and distillate in No. 1 Parker, SE cor. SW section 26-12-16. The test cored at 5,026-46 feet and recovered 6 feet of lime with a slight porosity and an odor of gas and distillate. Later reports stated that the section cored was approximately 40 feet in thickness, from 5,026 to 5,070 feet. A porosity of 12 per cent and a saturation of 28 per cent was reported for the lime, which corresponds to the section which produces the Portex Oil Corp.'s three gas-distillate wells located 4 miles to the southwest in Shelby County, Texas. The hole was reamed down following the coring of the lime section, and operators are drilling ahead, at latest reports, below 5,100 feet.

Five miles to the northwest of the Hunter test, S. S. Alexander No. 1 Stoil, NE cor. section 5-12-16, is drilling plugs for an attempted completion in the Young sand of the Glen Rose formation at 5,440 feet. The casing was perforated at 5,420-44 feet last week, but salt water broke in. It is reported that there is a considerable show of oil in the pits, and that prospects are good for a new oil well if salt water can be shut off.

Still further to the north, in the Waskom gas district of Harrison County, the Arkansas-Louisiana Gas Co. completed No. 1 Abney in the Eason Little Survey for an estimated daily production of 18,000,000 feet of gas. The well is bottomed at 4,834 feet, in the Hill sand of the Rodessa member of the Glen Rose series. It blew out several weeks ago at 4,830 feet, wrecking the derrick and damaging rotary.

Sugar Creek Completion

Another important gas development was the completion of Union Producing Co. No. 1 Coleman, SE cor. section 3-7-9. The well, variously estimated from 30,000,000 to 50,000,000 feet of gas daily on open flow, extended the gas production of the Sugar Creek for three-quarters of a mile to the north. While the well was cleaning, it showed some oil, and on subsequent flow tests, made a spray of oil. The tubing pressure is 1,400 pounds and casing pressure 2,000 pounds. The well is bottomed at 5,847 feet with perforations in the Travis Peak sand at 5,798-5,804 feet. No salt water has been noted in the production.

Cotton Valley Extensions

The outstanding test in the Cotton Valley field is No. 1 Pardee of Stanolind Oil & Gas Co., 1¾ miles southeast of nearest production. It cored the deep Bodcaw section during the week. The "A" stringer of anhydrite above the Bodcaw was topped at about 8,192 feet, based on cuttings, the "B" stringer at 8,232 feet, and the "C" stringer, the first sand, was cored at about 8,431-49 feet. The "D" stringer was found at 8,473-98 feet.

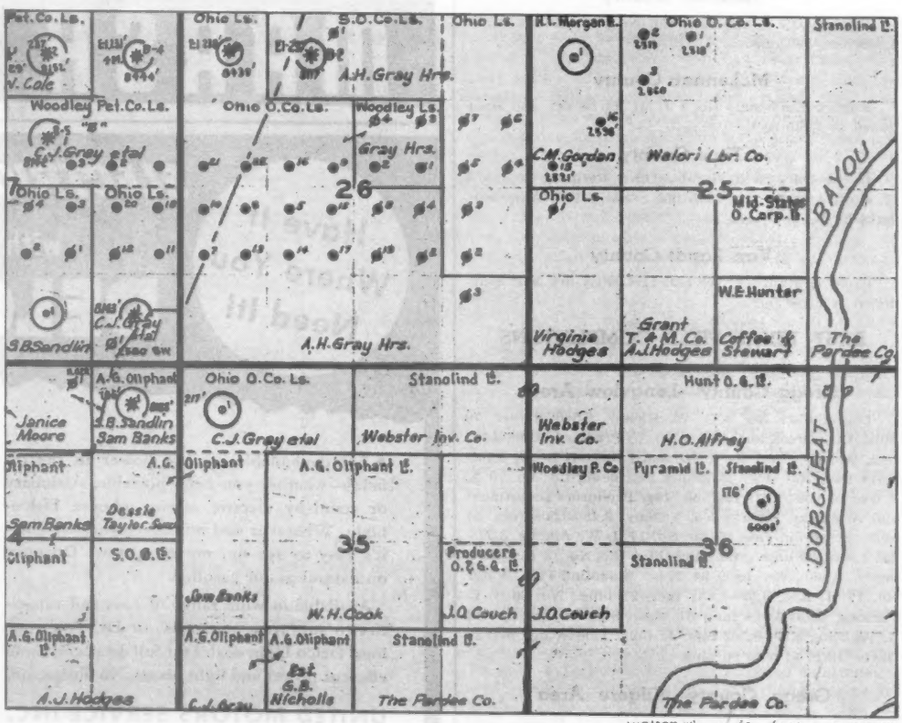
The "D" stringer showed the best possibilities of production. It contained 15 feet of porous section averaging 15 to 16 per cent porosity, and a permeability of 250 millidarcys. Although the samples were weathered, small parts of the cores recovered were tested, and showed some saturation. The section had distillate and gas odor, and fair porosity. The Bodcaw sand was topped at 8,565 feet, and showed inferior possibilities as compared with the "D" stringer.

According to the top of the Lower Marine, which was topped at 8,050 feet, the No. 1 Pardee is running about 19 feet lower than the Standard Oil Co. and Oliphant No. 1 Stewart, present southeastern edge well. The test is bottomed at 8,675 feet in chalk and a Schlumberger is being run.

The Holloway sand of Cotton Valley gained a slight extension during the week, with completion of the Hunt Oil Co. No. 3 Webb, C NW SW section 13-21-10. The well made an initial production of 41 bbls. per hour through a 24/64-inch choke. It extends the proven Holloway one-half mile east.

Lisbon Outpost

Another major extension for the Lisbon field of Claiborne and Lincoln parishes is apparent this week. The Oakes and others No. 1 Kilgore, NE cor. SE section 28-21-15, a 1¾-mile northwest outpost test, is reported to have cored saturated lime at 5,297-5,313 feet, total depth. Meanwhile, an east edge test, Skelly Oil Co.



Walter E. White, Maps, Shreveport.

Stanolind Oil & Gas Co. No. 1 Pardee, southeast outpost to the Cotton Valley field, cored the four stringers and the Bodcaw sand. Of the sections cored, the "D" sand immediately above the Bodcaw showed the best possibilities of production

No. 1 Enlee is on the lime and running a Schlumberger test.

No results of importance came this week from the deep Shongaloo test of the Magnolia Petroleum Co. in northern Webster Parish. The wildcat, No. 1 Sexton Unit, was shut down at total depth of 10,462 feet, with casing stuck at about 9,464 feet. Seven-inch casing is being set at that depth.

Schuler Extensions

The Schuler field of Union County, Arkansas, was extended on the north and south during the week by two field completions. On the north, the Alice Sydney Oil Co. No. 2 Powledge, NW cor. SW SE section 7-18-17, made 80 bbls. per hour through a three-quarters inch choke through perforations at 7,624-90 feet. Total depth is 7,700 feet. The well is producing in the Jones sand.

A second Jones sand completion extended the field on the south, when the E. M. Jones No. 2-A Murphy Land Co., SE cor. NE NE section 19-18-17, came in making an initial production of 49 bbls. per hour through a three-eighth inch choke with perforations at 7,350-7,550 feet. The well is bottomed at 7,610 feet.

The deepest test yet to be drilled in the field, Phillips Petroleum Co. No. 3 Justiss, was carried to a total depth of 8,328 feet in the Smackover lime, and casing was set at 7,800 feet during the week. The test will be completed for the third producer in the Reynolds lime, and will figure with the other two wells in the formation of proration rules for the deep horizon.

Production by Pool

Estimated daily gross production all companies week ending May 28:

NORTH LOUISIANA

	Bbls.
Bellevue	650
Caddo light	3,900
Caddo heavy	2,310
Converse	555
Cotton Valley heavy	100
Cotton Valley light	*10,615
De Soto and Red River	1,430
Elm Grove	375
Haynesville	2,910
Holly	75
Homer	2,650
Lisbon	7,500
Pleasant Hill	110
Rodessa	40,045
Sarepta-Carterville	310
Sligo	760
Sugar Creek	325
Urania	2,855
Zwolle	1,685
Total	78,460

SOUTH ARKANSAS

Buckner	830
Champagnolle	1,225
El Dorado	1,880
Lisbon	275
Miller County	390
Nevada	635
Rodessa	6,775
Schuler	7,915
Smackover light	2,055
Smackover heavy	16,325
Stephens	560
Troy	1,235
Urbana	1,250
Village	170
Total	41,520

Texas side of Rodessa field 34,890 bbls. daily.

*6,390 bbls. is distillate.

Michigan Fields

(Continued from Page 104)

Branch field, came in as a 10-bbl. daily natural producer, and is scheduled for acid treatment.

Arenac County—Clayton Township

Two average producers for the Clayton-Arenac area were added last week for the first new production in several weeks. McClanahan Oil Co. No. 4 Buffalo Land Co., SE NW NE section 10-20n-4e, gauged 50 bbls. daily after acid, and Weber Oil Co. No. 4 Whiting, SE SE NE section 10-20n-4e, was rated at 40 bbls. daily after acid.

Bay County—Garfield Township

Another Bay County wildcat attempting to hit an oil production zone proved a dry test. It was Michi-Oil, Inc., No. 1 Wampler, NW SE NE section 6-16n-3e.

Isabella County—Broomfield Township

Pure Oil Co. No. 12 Wille, NW NW SW section 4-14n-6w, one of the two active tests in the township, developed 85-bbl. daily production after acid, and extended the producing area half a mile south.

Fremont Township

While cutting some water, Bell & Marks, Inc., No. 1 Fox Sisters, SE SW SE section 5-13n-5w, was flowing late last week at about 75 bbls. daily after acid treatment.

Mecosta County—Aetna Township

One oil tests and a gasser were classed as failures last week in the Mecosta field. Carey-Mitchell Oil Co. No. 1 Blodgett, C SE SE section 22-13n-10w, was drilled into Dundee water with only a trace of oil. The Blodgett was completed for gas more than two years ago, and recently was deepened to the Dundee as an oil test. Taggart Bros. missed the gas pay on their No. 3 Community, C S half section 16-13n-10w, and will abandon the location.

Millbrook Township

Jetter Drilling Co. No. 1 Deakins, SE NE NE section 28-13n-7w, on the northern edge of the Six Lakes gas field, is fishing for a lost bailer at 3,612 feet in the Dundee limestone.

Newaygo County—Goodwell Township

Six miles to the northwest of Mescosta County's failures, Muskegon Development Co. No. 1 Carey, C N half NE NW 14n-11w, drilled into Dundee water after completing a fishing job approximately 50 feet in the pay stratum. The test will be abandoned.

California Fields

(Continued from Page 103)

well has not yet been on production long enough to make a gauge but it looks good for about 400 bbls. per day.

San Joaquin Basin

In the Mount Poso field of Kern County Shell Oil Co. has completed No. 23 Security in section 16-27-28 pumping 90 bbls. of 16.3 gravity oil daily from 1,675 feet and in the Round Mountain field Shell No. 17 Freeman in section 20-28-29 was good for 790 bbls. of clean 17.1-gravity oil daily from 1,934 feet. In the Kern River field, Hast Oil Co. finished No. 1 Kern in section 34-28-28 pumping 34 bbls. of clean 15.1-gravity oil daily from 358 feet after finishing the hole with a string of 8⅝-inch including 120 feet of perforated landed on bottom. Three potential producers are scheduled for completion in the Rio Bravo field within the next 10 days and as a result the potential of this field will be greatly increased. The wells scheduled for completion are Superior Oil Co. No. 3 Wagner in section 35-38-25, Superior No. 1 Anderson in the same section and General Petroleum Corp. No. 2 Wagoner also in the same section. All three wells are within striking distance of completion and should show substantial production. Union Oil Co. has resumed work on No. 2-34 Kern County Land in section 34-28-25 following a suspension of several weeks and is attempting to cut and remove the casing. The crew is using an outside cutter and may ultimately be able to cut out the portion of the casing that has collapsed and pinned the tubing tight. This well was standing cemented on top of the pay at 11,204 feet when the casing collapsed while the company was making a water shutoff test on the 7-inch landed and cemented at 11,200 feet.

Los Angeles Basin

Basin Oil Co. appear to have the making of a good well in the Potrero field of Los Angeles Basin as it has just been completed flowing 700 bbls. of fluid per day from 4,745 feet. The well is cleaning up and therefore no gauge is available as to the actual amount of oil produced. It is flowing through a 20/64-inch bean. The crude oil tests approximately 44 degrees in gravity. In the Long Beach field Johnston Drilling Co. has completed well No. 33 pumping 281 bbls. of relatively clean 23.3 gravity oil daily from 4,273 feet and in the Flood Control section of the Long Beach field Signal Oil Co. No. 1 Pacific Electric is good for 190 bbls. of clean 23.6-gravity oil daily from 3,937 feet. In the Huntington Beach field, Camroo Oil Co. No. 1 Smith has been recompleted flowing 433 bbls. of very clean 23.8-gravity oil per day on a compressor after the hole had been redrilled and deepened to 5,565 feet. In the Yorba Linda district Berco Oil Co. has recompleted No. 1 Milhous pumping 96 bbls. of 15.4-gravity oil per day from 1,773 feet but Burmah Oil Co. No. 1 Sloan tested wet at 2,338 feet after the hole had been carried down to 2,380 feet and then plugged back. It is believed that the plug in the bottom of the hole has proven ineffective. In the Harbor City section located adjacent to Los Angeles harbor D. & B. Oil Co. has cored some promising oil sand and preparations are under way to run in and cement a strong of casing preparatory to an early production test. Barnsdall Oil Co. and Superior Oil Co. expect to complete new wells in the Rosecrans field within another several days and if Superior's well shows large production it will result in the drilling of at least three additional wells.

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Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ontario, May 28.—Official figures show that crude oil and natural gasoline production from all Canadian fields in March established a new monthly record, totaling 480,803 bbls. compared with 413,158 bbls. in February and 176,657 bbls. in March, 1937. Production for the first quarter of 1938 aggregated 1,351,389 bbls. against 471,641 bbls. for the same period last year.

New Brunswick production in March was 25 bbls. compared with 7 bbls. in February. Ontario production increased from 11,564 to 13,046 bbls., and Alberta production from 401,587 to 467,732 bbls. For the three-month period New Brunswick dropped from 112 to 88 bbls.; and Ontario from 41,205 to 37,766 bbls., while Alberta increased from 430,324 to 1,313,515 bbls.

On the west flank of South Turner Valley, nine wells are finishing in the lime. In the far south, National Petroleum Corp. No. 2, LSD 14, section 9-18-2w5, which got the lime at 7,070 feet, is deepening below 7,621 feet and believed getting close to the main porous horizon.

In section 29-18-2w5, Model-Spooner-Reward No. 2, S half LSD 1, encountered the black lime at 7,185 feet, some 451 feet in the Madison. Tubing was run and the hole cleared with gas lift from Model No. 1. The well is being acidized preparatory to official test for potential. There is a large gas flare and a good producer is indicated.

In section 17-18-2w5, Sundance Royalties No. 1, LSD 9, got the black lime at 7,390 feet and finished at 7,410 feet after drilling 468 feet in the Madison. The hole was reamed out from 6 to 8 inches and is being tubed and acidized before making a definite production test.

In section 32-18-2w5, Royalite Oil Co. No. 30, LSD 11, the most outlying test to get the lime on the west flank, is below 7,321 feet after getting the Madison at 7,220 feet.

In section 29-18-2w5, Globe Royalties No. 1, LSD 7, got the lime at 6,955 feet and is resuming after cementing casing at 6,977 feet.

In section 21-18-2w5, Barsac Royalties No. 1, LSD 12, is below 6,565 feet after getting the Madison at 6,406 feet.

Three additional tests have recently entered the Madison. In West Central Turner Valley, Vulcan-Brown Petroleums No. 1, LSD 10, section 5-19-2w5, is cementing casing in the top of the Madison at 7,023 feet. It got the lime much deeper than previous tests farther north and east in the West Central area.

In section 20-18-2w5, United Brown Petroleums No. 5, LSD 1, got the Madison at 6,839 feet and cemented casing at 6,851 feet. It is deepening below 6,877 feet.

In section 16-18-2w5, Frontier Royalties No. 1, LSD 11, got the Madison at 6,489 feet and cemented casing at 6,505 feet.

West Flank Producers

In section 32-18-2w5, West Turner Petroleums No. 1, LSD 2, finished in the lime at 7,274 feet with potential of 1,318 bbls. a day, has completed official test for a new potential after acidizing. It made 3,418 bbls. a day open flow on the final day of the test, potential set at two-thirds of open flow being 2,340 bbls. Allowable production is 44 per cent of potential, or 1,030 bbls.

In section 21-18-2w5, Brown Oil Corp. No. 4, LSD 4, finished in the lime at 6,721 feet has been given an official potential of 1,095 bbls. a day, based on 1,643 bbls. open flow. Four Star Petroleum No. 1, LSD 12, section 28-18-2w5, showed 1,172 bbls. open flow and 781 bbls. potential. Richland Royalties No. 2, LSD 5, same section which had only a small production in the lime, will be acidized.

Okalta Deep Test

On the Okalta fold west of Turner Valley, Okalta Oil Co. No. 6, LSD 3, section 30-18-2w5, is below 7,800 feet and expected to go below 8,000 feet to reach the Madison.

West Flank Drilling

In West-Central Turner Valley, Mercury Royalties No. 1, LSD 8, section 5-19-2w5, is in the crooked hole sand below 5,580 feet after getting the Home sand at 5,470 feet.

In section 32-18-2w5, Vantage Oils No. 1, S half LSD 12, is rigging cable tools, to spud early in June. Davies Petroleums No. 4, LSD 10, is below 530 feet. West Turner No. 3, LSD 6, is below 1,800 feet. British Colonial Oils No. 1, LSD 5, is below 1,200 feet and will cement 16-inch casing around 1,500.

In section 20-18-2w5, Consolidated Royalties No. 1, LSD 14, is below 5,135 feet. Producers Crude Corp. No. 1, LSD 11, is reaming below 2,900 feet. Sunset Oils No. 2, LSD 7, is below 4,375 feet. York Oils No. 1, LSD 2, is below 4,860 feet.

In section 17-18-2w5, Coronation Royalties No. 1, LSD 10, is below 6,786 feet. Royalite Oil Co. No. 32, LSD 8, is below 4,661 feet.

In section 16-18-2w5, Brown Oil Corp. No. 5, LSD 12, is below 1,048 feet. Richwell Oil Co. No. 1, LSD 5, has resumed with cable tools from 1,892 feet and will change to rotary after cementing 10-inch casing around 3,000 feet.

In section 9-18-2w5, Marine Petroleums No. 1, LSD 11, is below 760 feet and carrying 16-inch casing after setting surface pipe at 135 feet. Rex Petroleums No. 1, LSD 9, is around 120 feet. Baroils No. 1, LSD 3, is below 1,067 feet.

In section 5-18-2w5, P. & H. Development Co. No. 1 C. & E. LSD 7, is resuming from 125 feet. In section 33-17-2w5, Davies Petroleums No. 3, LSD 7, is cleaning out at 3,220 feet. In section 16-17-2w5, Firth Petroleum No. 1, LSD 6, is below 500 feet.

North Turner Valley

In North Turner Valley, Phillips Royalties No. 1, LSD 16, section 16-20-3w5, is below 5,350 feet and logging satisfactorily.

New Tests Planned

In section 32-18-2w5, Shamrock Oils No. 1 is working on derrick in LSD 14.

Admiral Oils, Ltd., is arranging for a test in N half LSD 12, same section. Location is west of Royalite No. 30, which is now finishing in the limestone, and the Admiral company is obligated to drill if the Royalite well proves commercial.

East Side Drilling

On the New Valley structure east of Turner Valley, McLeod Oil Co. No. 1, LSD 4, section 6-21-2w5, has resumed with 1,800 feet of crude and open hole from 6,960 to 8,462 feet. Casing will be run and the oil bailed before deepening.

On the De Winton structure, Marquis Oils, Ltd., of Vancouver, British Columbia, is rigging cable tools at the Anglesey No. 1, in LSD 1, section 22-21-1w5. This test, drilled some years ago by the Marquis of Anglesey, discontinued at 4,500 feet after getting an oil show around 1,390 feet and gas shows at 3,251, 3,887 and 4,247 feet. The acreage has been taken over by Marquis Oils, Ltd., and deepening will be in charge of George G. Fleming. Location is north and east of McLeod No. 1 New Valley.

British Columbia Operations

In the Fraser Valley area, British Columbia, Natural Gas Development Corp. No. 1 in the Boundary Bay district, is being completed by the Boundary Bay Oil & Gas Co. The test resumed from 3,100 feet and is now below 3,300 feet in a gray and brown shale formation. Rotary tools are being used with Walter Chesley in charge.

Southwest Texas Fields

(Continued from Page 85)

Nueces County

Agua Dulce field: Union Producing Co. No. 3 Kerr, 5,390 feet, plugged back 5,295 feet, 3,561,000 feet of gas.

Luby field: Ohio Oil Co. No. 1 Shaefer, perforated casing 4,344-46 feet, 90 bbls., 16 hours, three-sixteenths inch choke. Seaboard Oil Corp. No. 19 Luby, perforated casing 5,059-65 feet, 161 bbls., one-eighth inch choke. Seaboard Oil Co. No. 23 Luby, perforated casing 5,171-74½ feet, 145 bbls., one-eighth inch choke.

Richard King field: Southern Minerals Corp. No. 7 King, perforated casing 4,010-18 feet, 125 bbls., one-eighth inch choke.

West Saxet field: Phillips Petroleum Co. No. 1 Smith, perforated casing 5,807-09 feet, 29 bbls., four hours, 9/64-inch choke. Renwar Oil Co. No. 7 McKenzie, perforated casing 5,817-21 feet, 67 bbls., eight hours, 5/32-inch choke. Renwar Oil Co. No. 10 McKenzie, 5,803 feet, 115 bbls., three-sixteenths inch choke. Renwar Oil Co. No. 13 McKenzie, perforated casing 5,804½-09 feet, 112 bbls., eight hours, three-sixteenths inch choke.

Webb County

O'Hern field: Hamill and Smith No. 25 Benavides, perforated casing 2,947 feet, 30 bbls. pumping.

Refugio County

Refugio field: Houston Oil Co. No. 43 Rooke, 6,183 feet, 210 bbls., quarter-inch choke.

Tomoconnor field. Hewitt and Dougherty No. 70 Lambert, perforated casing 5,842-55 feet, 628 bbls., quarter-inch choke. Hewitt and Dougherty No. 71 Lambert, perforated casing 5,891-5,902 feet, 601 bbls., quarter-inch choke. Quintana Oil Co. No. 17 Heard, 5,945 feet, 390 bbls., three-sixteenths inch choke. Quintana Oil Co. No. 66 O'Connor, 5,932 feet, 1,560 bbls., three-eighths inch choke.

San Patricio County

East White Point field: Plymouth Oil Co. No. 2 Kellogg, 5,665 feet, 7½ bbls., one-eighth inch choke. Baltic Drilling Co. No. 1 Burrows, 7,118 feet, 160 bbls., three-sixteenths inch choke.

Plymouth field: Plymouth Oil Co. No. 98-C Welder, 6,621 feet, 8 bbls., one-eighth inch choke.

Zapata County

Escobas field: Texas Co. No. 114 Measles, 1,269 feet, 40 bbls. pumping.

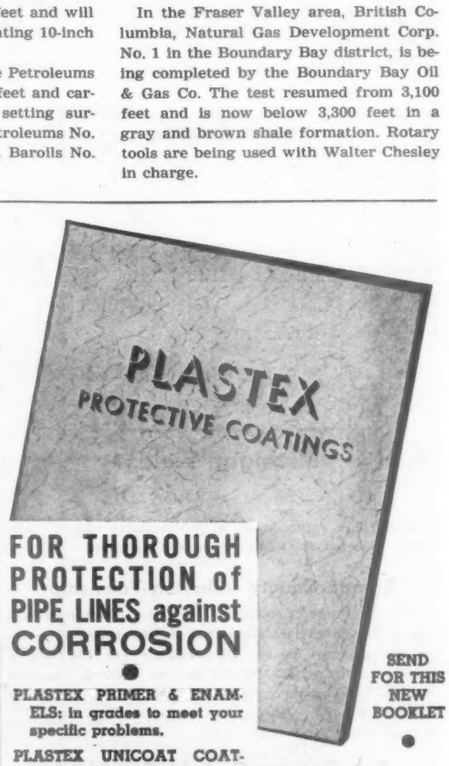
Mirando Valley field: Buffalo Oil Co. No. 1-B Hinnant, 1,889 feet, 10 bbls., quarter-inch choke. Buffalo Oil Co. No. 2-A Hinnant, perforated casing 1,884-89 feet, 102 bbls. pumping.

Victoria-Calhoun Counties

Heyser field: Sinclair Prairie Oil Co. No. 13 W. H. Bennett, perforated casing 5,486-92 feet, 152 bbls., 9/64-inch choke. Sun Oil Co. No. 8 W. V. Coffey, perforated casing 6,033½-35½ feet, 25 bbls., 7/64-inch choke. Humble Oil & Refining Co. No. 2 Vanderberge, sand 5,473-90 feet, 7 bbls. per hour, three-sixteenths inch choke.

East Telferner field: Harry Edwards No. 2 D. L. Robertson, perforated casing 5,107-09 feet, 101 bbls., 12/64-inch choke.

East Placedo field: Stanolind Oil & Gas Co. No. 1 Lera H. Warnken, perforated casing 6,379-80 feet, 154 bbls., one-eighth inch choke.



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WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well, location, and county—	S. T. R.	Depth	Status—
Wilshire Oil, No. 1 Gaviota, Santa Barbara	35- 5-33	3,977	gr. sd. drlg.
General Pet., No. 18 Erburu, Capitan, Santa Barbara	32- 5-30	1,340	O.S. drlg.
South Crude Oil, No. 2-191, Coal Oil Point, S. Barbara	tideland	5,510	redrlg. 1,358
Ohio Oil, No. 1 Morrison, Santa Maria, S. Barbara	27-10-34	5,198	pump 490 b.d.
Hancock-Bush, No. 2 Bradley, Santa Maria, S. Barb.	26-10-34	5,030	pump 820 b.d.
Bankline Oil, No. 1 Silva, Santa Maria, S. Barbara	7- 9-33	4,612	sd. sh. drlg.
Pacific West. Oil, No. 1 Car., Santa Maria, S. Barbara	28-10-34	2,392	sd. sh. drlg.
Moore, E. H., No. 1-F Sugar, Santa Maria, S. Barbara	19-10-34	4,762	flow 1,750 b.d.
G. & B. Oil, No. 1 B. & G., Santa Maria, Santa Barb.	26-10-34	4,652	sd. sh. drlg.
Selegna Oil, No. 1 S. M., Santa Maria, Santa Barbara	26-10-34	4,197	sd. sh. drlg.
Signal Oil, No. 12 Yelkin, Santa Maria, Santa Barbara	26-10-34	4,187	sd. sh. drlg.
Union Oil, No. 1 McCoy, Santa Maria, Santa Barbara	27-10-34	5,045	sd. sh. drlg.
Union Oil, No. 1 Mallory, Santa Maria, Santa Barbara	27-10-34	3,598	sd. sh. drlg.
Union Oil, No. 3 LeRoy, Santa Maria, Santa Barbara	24-10-35	5,395	pump 650 b.d.
Union Oil, No. 2-2 O'Donnell, Santa Maria, S. Barbara	20-10-34	5,240	sd. sh. drlg.
Union Oil, No. 1 Nicolai, Santa Maria, Santa Barbara	28-10-34	984	sd. sh. drlg.
Union Oil, No. 3 Bradley, Santa Maria, Santa Barbara	25-10-34	5,068	sd. sh. drlg.
Wilson Oil, No. 1-B, Santa Maria, Santa Barbara	26-10-34	5,373	milling
Sunshine Oil, No. 4 Wallace, Santa Maria, Santa Barb.	27-10-34	4,434	flow 1,050 b.d.
Jones, F. E., No. 2 Wisconsin, Santa Maria, S. Barb.	27-10-34	4,657	cleaning out
Standard Oil, No. 1 Cat Canyon, Santa Barbara	27- 9-33	5,529	redrlg. 5,273
O'Donnell, J. E., No. 1 Helen, Lompoc, Santa Barbara	8- 7-33	2,196	sd. sh. drlg.
Douglas Oil, No. 1, Los Alamos, Santa Barbara	8- 8-33	3,230	sd. sh. drlg.
United West. Oil, No. 1, Los Olivos, Santa Barbara	16- 7-30	3,190	hd. sd. drlg.
High Mesa Oil, No. 1 Butcher, Ojai, Ventura	16- 4-22	1,420	hd. sh. drlg.
St. Louis Oil, No. 1 Pirie Ojai, Ventura	18- 3-22	2,711	cleaning out
Rowe, W. G., No. 1 Johnson, Oxnard, Ventura	15- 1-22	4,475	fish tubing
Texas Co., No. 5 Yale, South Mountain, Ventura	13- 3-21	4,970	gr. sd. drlg.
Merchants Pet., No. 8 Sespe, Ventura	1- 4-20	561	sd. sh. drlg.
Claran, F. E., No. 1 Hardison, Sespe, Ventura	22- 4-20	394	hd. sd. drlg.
Continental Oil, No. 1 Elkins, Hopper Canyon, Vent.	23- 4-19	4,157	P.B. 4,120
C. C. M. Oil, No. 21 Hobson, Rincon, Ventura	8- 3-24	3,685	sd. sh. drlg.
C. C. M. Oil, No. 22 Hobson, Rincon, Ventura	17- 3-24	4,500	flow 365 b.d.
Richfield Oil, No. 8-F Hobson, Rincon, Ventura	8- 3-24	1,998	sd. sh. drlg.
Tide Water A. O., No. 19 V.L.W., Ventura Ave., Vent.	26- 3-23	9,000	O.S. drlg.
Tide Water A. O., No. 75 Lloyd, Ventura Ave., Vent.	26- 3-23	4,651	sd. sh. drlg.
Tide Water A. O., No. 76 Lloyd, Ventura Ave., Vent.	27- 3-23	4,850	recmtd. 4,841
Tide Water A. O., No. 111 Lloyd, Ventura Ave., Vent.	27- 3-23	7,144	redrlg. 7,094
Tide Water A. O., No. 127 Lloyd, entura Ave., Vent.	27- 3-23	5,091	sd. sh. drlg.
Tide Water A. O., No. 7 Hartman, Ventura Ave., Vent.	22- 3-23	2,198	sd. sh. drlg.
Tide Water A. O., No. 11 McGonigle, Vent. Ave., Vent.	23- 3-23	5,988	sd. sh. drlg.
Shell Oil, No. 94 Taylor, Ventura Ave., Ventura	20- 3-23	8,797	flow 1,210 b.d.
Shell Oil, No. 31 Edison, Ventura Ave., Ventura	20- 3-23	5,680	sd. sh. drlg.
Shell Oil, No. 37 Gosnell, Ventura Ave., Ventura	28- 3-23	8,375	sd. sh. drlg.
General Pet., No. 13 Notten, Ventura Ave., Ventura	28- 3-23	9,871	P.B. 8,948
General Pet., No. 18 Barnard, Ventura Ave., Ventura	21- 3-23	1,980	sd. sh. drlg.
Lloyd Corp., No. 1 Dabney-Lloyd, Ventura Ave., Vent.	24- 3-23	6,698	reaming
Amerada Pet., No. 5 Beer, Devils Den, Kern	22-26-19	8,297	hd. sh. drlg.
Gibson Oil, No. 3 Aiferitz, Devils Den, Kern	14-25-18	501	sd. sh. drlg.
Franco-Western Oil, No. 15, McKittrick, Kern	8-30-22	1,435	sd. sh. drlg.
Leyse & Sonne, No. 1 Pasadena, McKittrick, Kern	28-30-22	2,575	sd. sh. drlg.
Chico-Martinez Oil, No. 1 Holly, South Belridge, Kern	1-29-20	960	sd. sh. drlg.
Par-Mer Oil, No. 1 Kenden, South Belridge, Kern	25-29-20	695	idle
Randan Pet., No. 1 Theta, Lost Hills, Kern	3-26-20	1,625	cmtd. 1,535
Belridge Oil, No. 27-5 North Belridge, Kern	27-27-20	6,795	br. sh. drlg.
Belridge Oil, No. 27-6 North Belridge, Kern	27-27-20	8,400	flow 668 b.d.
Belridge Oil, No. 35-26 North Belridge, Kern	35-27-20	7,755	br. sh. drlg.
Tide Water A. O., No. 3-21 North Belridge, Kern	21-27-20	6,787	br. sh. drlg.
Richfield Oil, No. 2 North Belridge, Kern	22-27-20	5,895	br. sh. drlg.
Texas Co., No. 3 Martin, North Belridge, Kern	22-27-20	8,435	O.S. drlg.
Texas Co., No. 4 Martin, North Belridge, Kern	22-27-20	6,090	br. sh. drlg.
General Pet., No. 1 St. Helens, Belridge, Kern	12-28-20	8,685	P.B. 1,400
Pan-May Oil, No. 1 Coffee, Round Mountain, Kern	31-27-29	970	gr. sd. drlg.
Shell Oil, No. 17 Freeman, Round Mountain, Kern	20-28-29	1,934	sd. sh. drlg.
Shell Oil, No. 3 Olcese-Lilly, Round Mountain, Kern	21-28-29	1,491	sd. sh. drlg.
McDonald & Dearin, No. 4, Kern Front, Kern	11-28-27	121	sd. sh. drlg.
Rubenstein, A. B., No. 1 Lerdo, Kern	20-28-27	3,302	pump water
Fuhrman, Alfred, No. 25 Kern River, Kern	21-28-28	380	sd. sh. drlg.
Heim & Smith, No. 3-A Kernco, Kern River, Kern	34-28-28	615	cleaning out
Hast Oil, No. 1 Kern, Kern River, Kern	34-28-28	358	pump 30 b.d.
Shell Oil, No. 1 Durnal, Adobe Canyon, Kern	24-27-28	953	dry; abd.
Shell Oil, No. 2 Durnal, Adobe Canyon, Kern	24-27-28	817	sd. sh. drlg.
W. P. W. Oil, No. 3 Packard, Mount Poso, Kern	14-27-28	1,356	will abandon
Shell Oil, No. 23 Security, Mount Poso, Kern	16-27-28	1,675	pump 75 b.d.
Framac Oil, No. 3 Brown, Mount Poso, Kern	22-27-27	1,351	cleaning out
Master Pet., No. 3 Recovery, Mount Poso, Kern	33-26-28	1,599	cmtd. 1,585
Vanguard Oil, No. 30 Baker, Mount Poso, Kern	33-27-28	2,218	dry; abd.
Hogan Pet., No. 11 Porter, Mountain View, Kern	29-30-29	1,972	sd. sh. drlg.
Johnson, G. W., No. 1 Brown, East Edison, Kern	33-29-30	1,018	resume work
Stevens, R. W., No. 1 Sivert, Kern	22-30-30	26	sd. sh. drlg.
Union Oil, No. 1 Berry, Arvin, Kern	15-31-29	6,135	cleaning out
Petrex, Inc., No. 1 Edison, Arvin, Kern	32-31-30	3,648	resume work
Continental Oil, No. 1 Seaboard, KCL, Wasco, Kern	26-27-24	10,243	will deepen
Superior Oil, No. 3 Wagner, Rio Bravo, Kern	35-28-25	11,248	sd. sh. drlg.
Superior Oil, No. 4 Wagner, Rio Bravo, Kern	35-28-25	9,962	sd. sh. drlg.
Superior Oil, No. 2 Geissinger, Bravo, Kern	35-28-25	8,591	sd. sh. drlg.
Superior Oil, No. 1 Anderson, Rio Bravo, Kern	35-28-25	10,230	sd. sh. drlg.
Superior Oil, No. 1 Helbing, Rio Bravo, Kern	1-29-25	3,973	sd. sh. drlg.
Union Oil, No. 2-34 KCL, Rio Bravo, Kern	34-28-25	11,204	fishing
Union Oil, No. 3-34 KCL, Rio Bravo, Kern	34-28-25	8,572	sd. sh. drlg.
Getty Oil, No. 2 Ramsey, Rio Bravo, Kern	35-28-25	1,171	sd. sh. drlg.
General Pet., No. 1 Wagoner, Rio Bravo, Kern	35-28-25	10,192	redrlg. 7,445
General Pet., No. 2 Wagoner, Rio Bravo, Kern	35-28-25	10,770	sd. sh. drlg.
Standard Oil, No. 18-1 KCL, Una, Kern	29-28-26	8,015	sd. sh. drlg.
Shell Oil, No. 83-35 KCL, McFarland, Kern	35-26-25	5,990	sd. sh. drlg.
Harp Bros., No. 1 Armstrong, McFarland, Kern	9-26-26	1,325	bl. sh. drlg.
Dilmar Oil, No. 1 Quinn, Jasmin, Kern	15-25-27	2,956	P.B. 2,875
Standard Oil, No. 11-2 KCL, Greeley, Kern	20-29-26	11,520	O.S. drlg.
Standard Oil, No. 11-15 KCL, Greeley, Kern	18-29-26	3,184	sd. sh. drlg.
Continental Oil, No. 1-E KCL, Stevens, Kern	17-30-26	8,287	cmtd. 8,190
Standard Oil, No. 15-2 KCL, Canfield Ranch, Kern	27-30-26	3,085	sd. sh. drlg.
Shell Oil, No. 38-29-B KCL, Ten Section, Kern	29-30-26	2,294	sd. sh. drlg.
Shell Oil, No. 34-30-A KCL, Ten Section, Kern	30-30-26	8,200	flow 3,750 b.d.
Shell Oil, No. 47-30-B KCL, Ten Section, Kern	30-30-26	7,990	O.S. drlg.
Shell Oil, No. 58-30-B KCL, Ten Section, Kern	30-30-26	7,581	sd. sh. drlg.
Shell Oil, No. 21-32-B KCL, Ten Section, Kern	32-30-26	8,220	flow 2,946 b.d.
Shell Oil, No. 32-13-A KCL, Canal, Kern	13-30-25	7,494	sd. sh. drlg.
Ohio Oil, No. 6-E KCL, Canal, Kern	14-30-25	8,154	O.S. drlg.
Ohio Oil, No. 8-A KCL, Buena Vista Lake, Kern	32-31-26	10,475	sd. sh. drlg.
Berry & Ewing, No. 2 Midway-Sunset, Kern	31-32-24	1,221	O.S. drlg.
Texas Co., No. 1 Pioneer, Midway-Sunset, Kern	33-11-23	8,461	mill. 8,366
Salling Oil, No. 9 Midway-Sunset, Kern	2-11-24	970	P.B. 850
A.B.S. Corp., No. 12 Lewis, Sunset, Kern	20-11-23	3,890	P.B. 3,465
Ohio Oil, No. 3-D, Tejon Ranch, Kern	28-11-18	1,398	sd. sh. drlg.
Shell Oil, No. 4-26 KCL, San Emidio, Kern	26-11-22	9,604	sd. sh. drlg.
Richfield Oil, No. 1 KCL, Wheeler Ridge, Kern	28-11-20	2,654	sd. sh. drlg.
Pure Oil, No. 1 SPL, Cantua, Fresno	31-18-17	10,862	fish D.P.
Pet. Sec., No. 2 Gatchell, Turk, Fresno	18-20-16	6,850	cmtd. 6,700
Dauphin Dev., No. 1 Boone, Alcalde, Fresno	30-21-14	3,778	fish D.P.
Wilcox, J. F., No. 6, Coalinga, Fresno	11-20-14	458	sd. sh. drlg.
K. N. D. A., No. 67-20-J Kettleman North, Fresno	20-21-17	10,729	sd. sh. drlg.
K. N. D. A., No. 6-8-Q Kettleman North, Kings	6-22-18	8,630	gr. sd. drlg.
K. N. D. A., No. 38-8-Q Kettleman North, Kings	8-22-18	8,513	reaming
K. N. D. A., No. 27-16-Q Kettleman North, Kings	16-22-18	6,491	br. sh. drlg.
K. N. D. A., No. 58-16-Q Kettleman North, Kings	16-22-18	7,139	gr. sd. drlg.
K. N. D. A., No. 47-18-Q Kettleman North, Kings	18-22-18	8,004	reaming
K. N. D. A., No. 43-20-Q Kettleman North, Kings	20-22-18	7,394	hd. sh. drlg.
K. N. D. A., No. 27-22-Q Kettleman North, Kings	22-22-18	5,290	br. sh. drlg.
Standard Oil, No. 46-13-H Kettleman North, Fresno	13-21-16	10,470	sd. sh. drlg.
Standard Oil, No. 27-21-J Kettleman North, Fresno	21-21-17	10,920	P.B. 10,845
Standard Oil, No. 58-33-J Kettleman North, Fresno	33-21-17	8,318	gr. sd. drlg.
Standard Oil, No. 2-11-P Kettleman North, Kings	11-22-17	8,380	completing
Standard Oil, No. 78-1-P Kettleman North, Kings	1-22-17	6,686	sd. sh. drlg.
Standard Oil, No. 21-13-P Kettleman North, Kings	13-22-17	7,248	reaming 6,000
Standard Oil, No. 74-7-Q Kettleman North, Kings	7-22-18	6,870	sd. sh. drlg.

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Acd., acidized.
B.O., barrels of oil.
B.P.D., barrels per day.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
Br. sh., brown shale.
B.S., basic sediment.
Cd., or Crd., cored.
C.D., corrected depth.
Cg., coring.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg. or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
L.D.D., later drilled deeper.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging or plugged back.
P.B.P., pulling or pulled big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sdy. sh., sandy shale.
Sdtr., or St. sidetracking.
S.D.P.L., shut down for pipe line.
S.D.O., or S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T.P., tubing pressure.
Tr., tract.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting for cement to set.
W.P., working pressure.
W.S.O., water shutoff.
W.S.S.O.K., water shutoff O.K.
W.S.O.N.G., water shutoff no good.
W.S.R. or W.O.S.R., awaiting standard rig.
Wtr., water.

Standard Oil, No. 85-7-Q Kettleman North, Kings ..	7-22-18	7,987	sd. sh. drlg.
Standard Oil, No. 61-21-Q Kettleman North, Kings ..	21-22-18	3,000	sd. sh. drlg.
Cal. Pet. Prod. Co., No. 1 Elkhorn, San Luis Obispo.	6-10-25	1,580	cleaning out
Hancock Oil, No. 1 Dick, Huasna, San Luis Obispo..	30-12-33	3,361	rebldg. rig
West. Plains Oil, No. 2 Panorama Hills, San L. Obispo	2-32-21	2,468	sd. sh. drlg.
Baringer & Gould, No. 2 Sears, Ducor, Tulare	29-24-28	827	sd. sh. drlg.
Crusaders Oil, No. 1 Ducor, Tulare	1-24-27	170	sd. sh. drlg.
Caminol Co., No. 3 A. O. B., Allensworth, Tulare ...	29-24-24	7,555	will deepen
Wilshire Oil, No. 1 Cowell, Half Moon Bay, S. Mateo	20- 6- 5	8,030	P.B. 2,525
Ohio Oil, No. 1-A Willard, Willows, Glenn	18-20- 2	3,850	sd. sh. drlg.
Richfield Oil, No. 1 Potrero Hills, Solano	10- 4- 1	3,250	fish D.P.
Amerada Pet., No. 2 S.S.J., Rio Vista, Solano	18- 4- 3	4,397	sd. sh. drlg.

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WLDCATS

Company, well, location, and county—	S. T. R.	Depth	Status—
Basin Oil, No. 1, Potrero, Los Angeles	34- 2-14	4,740	sd. sh. drlg.
Ohio Oil, No. 12 Gough, El Segundo, Los Angeles .	7- 3-14	7,345	sd. sh. drlg.
Apex Pet., No. 3 Elsie, El Segundo, Los Angeles ...	12- 3-15	4,977	sd. sh. drlg.
Sovereign Oil, No. 2, El Segundo, Los Angeles	12- 3-15	4,775	sd. sh. drlg.
Treasure Oil, No. 3, Playa Del Rey, Los Angeles ...	21- 2-15	6,360	Schist; drlg.
D. & B. Oil, No. 1 Lomita, Los Angeles	30- 4-13	5,242	sd. sh. drlg.
Patton-Conway, No. 1 fee, Torrance, Los Angeles	15- 4-14	3,825	cleaning out
McCaslin, W. E., No. 1 Whitney, Torrance, L. Angeles	23- 4-14	4,990	sd. sh. drlg.
Grubbs & Main, No. 1 Lyman, Torrance, Los Angeles	14- 4-14	3,822	cleaning out
Gypsy Oil, No. 16 Getty, Torrance, Los Angeles	14- 4-14	3,200	cleaning out
Albertson Oil, No. 2, Torrance, Los Angeles	14- 4-14	3,821	redrlg. 3,655
Anderson, N. H., No. 1, Torrance, Los Angeles	15- 4-14	4,956	pump 275 b.d.
McDonald & Burns, No. 5 Moore, Torrance, L. A. ..	23- 4-14	4,795	sd. sh. drlg.
McDonald & Burns, No. 8 Moore, Torrance, L. A. ..	22- 4-14	4,987	sd. sh. drlg.
Camp, C. W., No. 12, Torrance, Los Angeles	23- 4-14	5,017	sd. sh. drlg.
Doyle Pet., No. 3-A Getty, Torrance, Los Angeles ..	14- 4-14	5,477	deep test
Elexico Oil, No. 1 Allen, Torrance, Los Angeles ..	23- 4-14	3,677	sd. sh. drlg.
Charleston Oil, No. 1 Marcoux, Torrance, Los Angeles	23- 4-14	3,800	redrlg. 1,997
Marel Oil, No. 1 Leaver, Torrance, Los Angeles ..	14- 4-14	5,025	sd. sh. drlg.
Kelley, F. C., No. 1 Wilson, Torrance, Los Angeles ..	14- 4-14	3,750	rigging up
Hughes, M., No. 2, Torrance, Los Angeles	14- 4-14	1,994	sd. sh. drlg.
Krause & Baker, No. 2 Gladys, Torrance, L. A.	14- 4-14	3,795	rigged up
Peters Royalty, No. 1, Torrance, Los Angeles	14- 4-14	5,023	sd. sh. drlg.
Consolidated Pet., No. 1, Torrance, Los Angeles	15- 4-14	5,000	O.S. drlg.
Texas Co., No. 9 Wilson, Torrance, Los Angeles	15- 4-14	4,975	sd. sh. drlg.
Texas Co., No. 10 Wilson, Torrance, Los Angeles	22- 4-14	3,782	sd. sh. drlg.
Texas Co., No. 11 Wilson, Torrance, Los Angeles	14- 4-14	3,761	sd. sh. drlg.
Wilson, R. K., No. 1 Cook, Torrance, Los Angeles ..	14- 4-14	4,987	sd. sh. drlg.
Star Pet. Co., No. 1 G & A, Torrance, Los Angeles ..	23- 4-14	3,751	redrlg. 1,830
Superior Oil, No. 6, Torrance, Los Angeles	14- 4-14	4,972	pump 160 b.d.
Imperial Gypsum, No. 1 De Witt, Torrance, L. A. ..	14- 4-14	5,004	sd. sh. drlg.
Imperial Gypsum, No. 2 Getty, Torrance, L. A.	14- 4-14	3,785	rigged up
C. C. M. O. Co., No. 8, Torrance, Los Angeles	15- 4-14	3,890	rigging up
C. C. M. O. Co., No. 13, Torrance, Los Angeles	15- 4-14	3,723	cleaning out
C. C. M. O. Co., No. 23, Torrance, Los Angeles	14- 4-14	5,023	casing leak
Hansco Oil, No. 1, Torrance, Los Angeles	14- 4-14	3,825	deepening
Kamco, Inc., No. 1, Torrance, Los Angeles	31- 3-13	3,271	deepening
Berken Oil, No. 1 Star, Torrance, Los Angeles	15- 4-14	4,998	fishing
Stabler, W., No. 2 Marland, Dominguez, Los Angeles	3- 4-13	4,286	cleaning out
Union Oil, No. 58 Callender, Dominguez, Los Angeles	33- 3-13	7,570	sd. sh. drlg.
Barnsdall Oil, No. 3 Trust, Rosecrans, Los Angeles	18- 3-13	7,789	O.S. drlg.
Union Oil, No. 20 Rosecrans, Rosecrans, Los Angeles	18- 3-13	4,783	sd. sh. drlg.
Universal Consd., No. 3 Trust, Rosecrans, L. Angeles	18- 3-13	6,662	sd. sh. drlg.
Howard Oil, No. 1 Gordon, Rosecrans, Los Angeles	19- 3-13	6,596	redrld. 5,275
Superior Oil, No. 8 Maxwell, Rosecrans, Los Angeles	19- 3-13	7,350	sd. sh. drlg.
Barnsdall Oil, No. 3 S. F., Newhall, Los Angeles ..	26- 4-17	5,394	sd. sh. drlg.
Shell Oil, No. 1 Dougherty, Saugus, Los Angeles	9- 4-17	561	sd. sh. drlg.
Royal Lands, No. 1, Ramona, Los Angeles	8- 4-17	615	cleaning out
General Pet., No. 3 Blinn, Wilmington, Los Angeles	4- 5-13	2,090	sd. sh. drlg.
General Pet., No. 4 Harbor, Wilmington, Los Angeles	2- 5-13	2,781	sd. sh. drlg.
General Pet., No. 12 Harbor, Wilmington, L. Angeles	2- 5-13	2,492	sd. sh. drlg.
General Pet., No. 3-S.P., Wilmington, Los Angeles ..	2- 5-13	4,125	O.S. drlg.
Caleb Pet., No. 1 F.H., Wilmington, Los Angeles ..	32- 4-13	3,650	pump 35 b.d.
Hogan Pet., No. 3 Graham, Wilmington, Los Angeles	2- 5-13	2,781	sd. sh. drlg.
Hancock Oil, No. 4-A Wilmington, Los Angeles	3- 5-13	3,620	O.S. drlg.
Hancock Oil, No. 10-B, Wilmington, Los Angeles	2- 5-13	1,983	sd. sh. drlg.
Hancock Oil, No. 11-B, Wilmington, Los Angeles	2- 5-13	4,050	flow 3,554 b.d.
Hancock Oil, No. 16-B, Wilmington, Los Angeles ..	2- 5-13	4,040	flow 2,365 b.d.
Hancock Oil, No. 24-C, Wilmington, Los Angeles	2- 5-13	2,197	sd. sh. drlg.
Hollywood Oil, No. 1 Baxter, Wilmington, L. A.	2- 5-13	3,424	P.B. 3,390
Macson Oil, No. 3-55-C, Wilmington, Los Angeles ..	32- 4-13	3,050	flow 340 b.d.
Richfield Oil, No. 1-P.D., Wilmington, Los Angeles	2- 5-13	1,996	sd. sh. drlg.
Richfield Oil, No. 2-P.D., Wilmington, Los Angeles	2- 5-13	4,237	O.S. drlg.
Richfield Oil, No. 3-P.D., Wilmington, Los Angeles	2- 5-13	4,252	O.S. drlg.
Richfield Oil, No. 5-P.D., Wilmington, Los Angeles	2- 5-13	2,670	sd. sh. drlg.
Richfield Oil, No. 6-P.D., Wilmington, Los Angeles	2- 5-13	3,890	O.S. drlg.
Richfield Oil, No. 11-P.D., Wilmington, Los Angeles	2- 5-13	3,845	P.B. 3,658
Richfield Oil, No. 18-P.D., Wilmington, Los Angeles	2- 5-13	3,043	sd. sh. drlg.
Richfield Oil, No. 19-P.D., Wilmington, Los Angeles	2- 5-13	3,140	flow 540 b.d.
Richfield Oil, No. 20-P.D., Wilmington, Los Angeles	2- 5-13	3,245	flow 260 b.d.
Richfield Oil, No. 2-R.G., Wilmington, Los Angeles	2- 5-13	1,953	sd. sh. drlg.
Richfield Oil, No. 3-R.O., Wilmington, Los Angeles	2- 5-13	3,140	pump 145 b.d.
Richfield Oil, No. 1-P.G., Wilmington, Los Angeles	2- 5-13	3,903	O.S. drlg.
Sunray Oil, No. 2 Lakme, Wilmington, Los Angeles	32- 4-13	1,998	sd. sh. drlg.
Universal Consd.. No. 5 Newport, Wilmington, L. A.	2- 5-13	3,871	redrlg. 3,791
Union Pacific R.R., No. 73, Wilmington, Los Angeles	34- 4-13	3,960	O.S. drlg.
Union Pacific R.R., No. 6-E, Wilmington, Los Angeles	3- 5-13	3,910	O.S. drlg.
Union Pacific R.R., No. 7-E, Wilmington, Los Angeles	3- 5-13	2,901	O.S. drlg.
Union Pacific R.R., No. 8-E, Wilmington, Los Angeles	3- 5-13	2,500	O.S. drlg.
Union Pacific R.R., No. 9-E, Wilmington, Los Angeles	3- 5-13	2,730	O.S. drlg.
Union Pacific R.R., No. 2-P.D., Wilmington, L. A. ..	3- 5-13	2,620	O.S. drlg.
Wilgate Oil, No. 1 Harbor, Wilmington, Los Angeles	2- 5-13	3,000	O.S. drlg.
Johnston Drlg., No. 1 Pico, Montebello, Los Angeles	5- 2-11	5,641	dry; abd.
St. Helens Pet., No. 26 Monterey, Montebello, L. A.	2- 2-12	5,452	recmtd. 5,445
St. Helens Pet., No. 27 Monterey, Montebello, L. A.	2- 2-12	4,596	sd. sh. drlg.
St. Helens Pet., No. 2 Eggleston, Montebello, L. A.	2- 2-12	2,364	sd. sh. drlg.
Union Oil, No. 1 H. & S., Montebello, Los Angeles ..	2- 2-12	4,297	sd. sh. drlg.
Union Oil, No. 1 Wilcox, Montebello, Los Angeles ..	2- 2-12	6,248	sd. sh. drlg.
Standard Oil, No. 2 Harvey, Montebello, L. A.	2- 2-12	5,450	sd. sh. drlg.
Herley-Kelley, Inc., No. 1 Burke, Montebello, L. A.	2- 2-12	2,374	sd. sh. drlg.
Brookline Oil, No. 1 Drake, Montebello, Los Angeles	2- 2-12	4,871	sd. sh. drlg.
British American Oil, No. 1 Pico, Los Angeles	12- 2-12	4,568	idle
Monte Cristo Oil, No. 1, Monterey Park, Los Angeles	27- 1-12	5,433	idle
Colorado Oil, No. 19, Whittier, Los Angeles	22- 2-11	2,052	P.B. 2,021
Hilldon Oil, No. 2 Poole, North Long Beach, L. A. ..	13- 4-13	4,178	pump 245 b.d.
Hilldon Oil, No. 3 Poole, North Long Beach, L. A. ..	13- 4-13	3,571	sd. sh. drlg.
Hilldon Oil, No. 4 Poole, North Long Beach, L. A. ..	13- 4-13	955	sd. sh. drlg.
Hilldon Oil, No. 1-8, North Long Beach, Los Angeles	14- 4-13	6,594	sd. sh. drlg.
Signal Oil, No. 1 P. E., North Long Beach, L. A.	13- 4-13	3,937	O.S. drlg.
Johnston Drlg., No. 33, Long Beach, Los Angeles ..	13- 4-13	4,179	sd. sh. drlg.
Exeter Oil, No. 2-A Clark, Long Beach, Los Angeles	24- 4-13	3,501	sd. sh. drlg.
Dunlap Oil, No. 13, Long Beach, Los Angeles	30- 4-12	4,985	sd. sh. drlg.
Texas Co., No. 1 Wilson, Long Beach, Los Angeles ..	29- 4-12	3,465	fish D.P.
Winrock Oil, No. 1 Encinos, Long Beach, Los Angeles	13- 4-13	4,270	O.S. drlg.
Richfield Oil, No. 5-B, Long Beach, Los Angeles ..	13- 4-13	3,896	sd. sh. drlg.
J. E. F. Oil, No. 1 Schaaf, Huntington, Los Angeles.	36- 5-11	4,400	cmtd. 4,340
Texas Co., No. 3 Pearce, Huntington, Orange	2- 6-11	3,170	sd. sh. drlg.
Brea Canyon Oil, No. 48, Brea Canyon, Orange	2- 3-10	3,460	sd. sh. drlg.
Standard Oil, No. 2, Bastanchury, W. Coyote, Orange	21- 3-10	5,983	sd. sh. drlg.
Shell Oil, No. 1 Weisel, Anaheim, Orange	16- 4-10	4,299	sd. sh. drlg.
Millerand Pet., No. 1 Miller, Yorba, Orange	22- 3- 9	1,398	hd. sd. drlg.
Pearl J. Oil, No. 1 Dobashi, Yorba, Orange	21- 3- 9	1,804	idle
Burmah Oil, No. 1 Sloan, Yorba, Orange	21- 3- 9	2,338	pump water
Berco Oil, No. 1 Milhous, Yorba, Orange	22- 3- 9	1,773	pump 70 b.d.
Beth Oil, No. 1 Dillingham, Yorba, Orange	21- 3- 9	1,160	sd. sh. drlg.
Signet Oil Co., No. 2 Kraemer, Yorba, Orange	21- 3- 9	994	idle

OKLAHOMA

Week Ending May 28

NORTHERN OKLAHOMA

Adair County

Maddon-Penn Mutual Life Ins. Co., C S½ NE NW sec. 5-16-24. T.D. 520 ft.; S.D.

Beckham County

United-American Oil Co. No. 1-A Biscoe, SW cor. sec. 28-8-22w. T.D. 2,764 ft.; S.D.

Cleveland County

G. A. Delaney et al No. 1 Bugher, SE SE SW sec. 12-7-2w. T.D. 7,682 ft.; flwd. 640 B.O. and 210 B.W. in 10 hrs.; S.I.

Cimarron County

Barnsdall Oil Co. No. 1 School Ld., C NW SE sec. 35-5-5ecm. Drlg. 4,440 ft.

Comanche County

Midnite O. & G. Co. No. 1 Howe, NW NW NW sec. 20-2n-12w. Drlg. 135 ft.

Clyde Roach No. 1-A Green, SE SE SW sec. 2-1n-13w. T.D. 670 ft.; S.D.

Creek County

L. B. Jackson No. 1 Berryhill, NW NW NW sec. 1-18-10. Drlg. 1,580 ft.

A. W. Mosier et al No. 1 Holcomb, SE SW NW sec. 19-18-8. T.D. 3,018 ft.; 2,000 ft. W.I.H. and S.S.O.; S.D.

Garfield County

J. E. Kendall et al No. 1-A State, SW cor. sec. 13-23-3w. Spd.

Garvin County

First Natl. Oil Co. No. 1 Butterly, NE NE SE sec. 22-1n-1e. T.D. 100 ft.; R. U.R.

Grady County

Gulf Oil Corp. No. 1 Thomas, SW NW NW sec. 14-4-5w. T.D. 11,415 ft.; pipe stuck.

Greer County

J. H. Everitt No. 1 Graumann, NE NW NW sec. 11-5-21w. T.D. 550 ft.; S.D.

Hughes County

Homer Doup et al No. 1 Bank, NE NE NW sec. 7-7-9. S.D. 1,050 ft.

Phillaine Oil Co. No. 1 Morrison, SE SE SW sec. 13-9-10. T.D. 4,041 ft.; flwd. 22 B.O. in 36 hrs.; drlg. 4,097 ft.

Phillips Pet. Co. No. 1 Becker, NE NW SW sec. 8-5-10. T.D. 6,286 ft.; plug. 5,612 ft.; drld. out to 5,660 ft.; flwd. 202 B.O. in 24 hrs.; cutting 25%.

Troup & Strickland No. 1 Brown, NW SW NE sec. 32-6-8. S.D. 660 ft.

Kay County

Helmerich & Payne No. 1 Sch. Ld., SW SE SW sec. 16-28-1w. Drlg. 2,455 ft.

Clark C. Nye No. 1 Willin, SE SE SW sec. 24-27-4. Drlg. 2,558 ft.

S. J. Shaffer et al No. 1 McKee, NE NW sec. 20-28-1w. T.D. 2,500 ft.; S.D.

Kiowa County

Anderson-Prichard Oil Corp. No. 1 Cribbs, sec. 28-7n-19w. Drlg. 1,230 ft.

Anderson-Prichard Oil Corp. No. 1 Johnson, sec. 10-7-20w. T.D. 1,210 ft.; fsg.

Anderson-Prichard Oil Corp. No. 1 Sch. Ld., SE SE SE sec. 14-6n-17w. T.D. 431 ft.; rng. csg.

Gauntt & Baker No. 1 Parks, NW NW SW sec. 29-7-20w. Drlg. 820 ft.

Hughes & Reese No. 1 Fultz, SE SE SE sec. 10-6-18w. T.D. 1,238 ft.; S.D.

Lincoln County

Wilcox O. & G. Co. No. 1 Royer, SE SE NE sec. 18-14-6. T.D. 3,372 ft.; P.B. 3,240 ft.; waiting.

Logan County

Sinclair-Prairie No. 1 Crews, SW SW NE sec. 27-16-1e. T.D. 5,215 ft.; open 40 min.; rec. 180 ft. oil and 450 ft. mud; W.O.C.

Muskogee County

T. P. Clants No. 1 Jennings, NW NW NE sec. 8-13n-19. S.D. 810 ft.

Heydrick No. 1 Paschall, NE SE NW sec. 22-13n-19. S.D. 678 ft.

O. K. Jackson No. 1-A Smith, SW NE NE sec. 23-16-15. S.D. 585 ft.

Murray County

Gilbreath & Dutton No. 1 Wolfe, C SE SW sec. 8-1-2. T.D. 2,522 ft.; perf.; 35,334,000 ft. gas; S.I.

Okfuskee County

Burke-Greis Oil Co. No. 1 Capps, SE cor. sec. 7-13-7. T.D. 3,227 ft.; shot 2,818-48 ft.; 2,874 ft.; S.D. to D.D.

W. R. Ramsey et al No. 1 Parks, SE SE SE sec. 4-12n-7. T.D. 4,538 ft.; S.G.; to D.D.

Osage County

Chevalier-Simon No. 1 Osage, NW NW SW sec. 33-27-5. S.D. 2,385 ft.

I.T.I.O. Co. No. 1 Osage, SW SW NW sec. 7-24n-7. T.D. 2,830 ft.; D.&A.

Norbia Oil Co. No. 1 Osage, SE cor. sec. 18-25-7. T.D. 2,784 ft.

Wah Sha She Oil Co. No. 1 Osage, NE NE NW sec. 4-28n-9. T.D. 1,503 ft.; fsg.

Pawnee County

O. O. Owens et al No. 1 Riddle, C E½ E½ NW sec. 30-22-7. T.D. 2,400 ft.; H.F.W.; U.R. 8-in.

Payne County

R. L. Kemp et al No. 1 Rafferty, SE SE NE sec. 6-18-5. T.D. 3,705 ft., sd.; 500 ft. O.I.H.; to shoot.

Texas Co. No. 1 Logan, C W½ NW NW sec. 12-17-1e. T.D. 4,956 ft.; flwd. 525 B.O. in 13 hrs.; est. 600,000 ft. gas; grav. 46; to run tbg.

Pittsburg County

Supreme Oil Corp. No. 1 Hickey, NW SW NW sec. 4-2n-15. S.D. 643 ft.

Supreme Oil Co. No. 1 Stevenson, SW SW SE sec. 27-3n-14. S.D. 75 ft.

Pontotoc County

Caloma Oil Corp. No. 1 Brents, SE NE SW sec. 4-1n-6. T.D. 1,574 ft.; S.D.; lost circ.

Farmers Mutual Royalty Corp. No. 1 Waite, NE NE NW sec. 9-5-5. Wilcox sd. 3,200 ft.; drlg. 3,202 ft.

Loss Henry No. 1 Parker, SW SW SE sec. 17-4n-8. Drlg. 593 ft.

H. W. Lee No. 1 Weatherby, NW SE NW sec. 24-1n-7. S.D. 700 ft.

Jack Lynch et al No. 1-A Parker, SW SW SE sec. 17-4-8. T.D. 4,200 ft.; S.D.R.

Union Dev. Co. No. 1-A Abbott, SW NW NE sec. 34-3-6. Drlg. 150 ft.

Pottawatomie County

C. W. James No. 1 Henderson, NW NW NE sec. 4-5n-3. Rig.

Pure Oil Co. No. 1 Lack et al, SE SW NW sec. 3-6-5. T.D. 3,965 ft.; R.U.S.T.

Shell Pet. Corp. No. 1 Boley, SE SE SW sec. 5-11-6. T.D. 4,748 ft.; D.&A.

Seminole County

Boetcher O. & G. No. 1 Morgan, SE NE NW sec. 8-5n-7. Fsg. 450 ft.

Denver P. & P. No. 1 Mathis, SW NW SW sec. 7-6-6. Drlg. 2,665 ft.

W. B. Pine No. 1 Wright, SE SE NE sec. 16-6-6. Drlg. plug to 3,566 ft.; shot and swbd. 22 B.O. in 3 hrs.; P.O.P.

Smith & Greer No. 1 Coker, NW NE NE sec. 25-7-5. T.D. 3,014 ft.; swb. 25 B. O. and 25 B.W. in 24 hrs.; P.O.P.

Villines et al No. 1 Reed, NE NE NE sec 35-7n-5. T.D. 3,005 ft.; P.B. 2,999 ft.; shot and swbd. 90 B.O. in 24 hrs. while rng. tbg.

Wood Oil Co. No. 1 Cully, SW SW NW sec. 34-7-5. Drlg. 3,675 ft.

Washita County

L. B. McWhirter No. 1 fee, NW SW SW sec. 34-8-19w. T.D. 2,147 ft.; fsg.

SOUTHERN OKLAHOMA

Atoka County

C. M. Sheldon and Gardner Pet. Co. No. 1 Lee, NE NW SW sec. 2-4s-10e. T.D. 3,110 ft.; S.D.

Carter County

Texas Co. No. 1-B Cathey, SE NE NE sec. 6-5s-1w. T.D. 5,685 ft.; P.B. 5,477 ft.; shot; 3,600 ft. F.I.H.; may acd.

Choctaw County

Dr. Hardy et al No. 1 fee, SE SE NW sec. 21-7s-15. Drlg. 310 ft.

Clyde Ross et al No. 1 Hardy, SE SE NW sec. 21-7s-15. Drlg. 890 ft.

Cotton County

Jim Turner et al No. 3 Collins, SE SE NE sec. 18-4s-10w. R.U.R.

Creek County

L. B. Jackson No. 1 Berryhill, NW NW NW sec. 1-18n-10. Drlg. 250 ft.

Jefferson County

J. Roy Stebbins et al No. 1 Bourland,

SW SW SE sec. 24-7s-4w. Drlg. sh. 4,170 ft.

Love County

Sinclair Prairie Oil Co. No. 1 Peabody, NE cor. sec. 35-6s-2w. T.D. 5,961 ft.; drill pipe stuck.

Marshall County

E. W. Hughes Drlg. Co. et al No. 1 Vittitoe, C NE SE sec. 11-5s-4e. Drlg. L. 7,002 ft.

Stephens County

Coline Oil Co. No. 1 Johnson, C SW SE SE NE sec. 1-2n-8w. T.D. 10,000 ft.; 9,050 ft.; made several hd. flws., 37-grav. oil. S.I.O.

B. F. Lundy et al No. 1 Oxford, NE NE SW sec. 26-1s-4w. T.D. 4,204 ft., sdy. sh.; D.&A.

Tillman County

J. Ben Russell and Ray No. 1 Hasting, NW NE NW sec. 4-1s-19w. O.W.D.D.; old T.D. 3,465 ft.; D.&A.

Smith No. 2 Hammell, NE NW NW sec. 6-5s-15w. T.D. 2,000 ft.; S.D.

KANSAS

Week Ending May 28 (Descriptions are East unless marked otherwise)

Barton County

Armer & Vernon No. 1 Seyfert, NW SW NE sec. 3-17-13w. Drlg. 2,205 ft.

Champlin Ref. Co. No. 1 Reeves, SW sec. 29-20-14. Arb. 3,637 ft.; S.S.O.; T.D. 3,656 ft.

Crown Pet. Corp. No. 1 Wolf, SE SW SE sec. 36-19-12w. Drlg. 1,840 ft.

R. E. Day et al No. 1 Felts, SE SE NE sec. 14-16-12w. S.D. 1,875 ft.

Kessler O. & G. No. 1 Bowman, SW NE sec. 22-20-16w. Drlg. 1,500 ft.

Price et al No. 1 Wondra, NW NE sec. 10-17-13w. T.D. 3,343 ft.; P.B. 3,342 ft.; p. 539 B.O.P.D., 20% wtr.

Sinclair Prairie Oil Co. No. 1 Frederick, SW SW SE sec. 16-16-11w. Arb. 3,322 ft.; T.D. 3,346 ft.; set 5-in. csg. 3,322 ft.; acd.; swb. 60 B.O. and 78 B.W. in 11 hrs.; C.O.

Western Kansas O. & R. Co. and Republic Nat. Gas Co. No. 1 Linsner, SW SW SE sec. 3-17-13w. Drlg. 2,725 ft.

Butler County

Bennett & Abels No. 1 Glass, SE SW NW sec. 14-25-3. Drlg. 2,100 ft.

T. S. Dustin No. 1 Miley, SE NW NE sec. 17-27-5e. T.D. 1,960 ft.; S.G.; H.F.W.

Chase County

T. D. Duffy No. 1 Leedy, NE NW NW sec. 26-22-9e. T.D. 2,487 ft.; S.D.

Coffey County

Barner & Leiker No. 1 Knapp, SE SW NW sec. 27-22-14. Drlg. 555 ft.

Western Kans. O. & R. Co. No. 1 Knapp, SW SW NW sec. 27-22-14. Spd.

Cowley County

Hutchinson O. & G. Co. No. 1-A Ketchen, SW SE SE sec. 11-35-5. Drlg. 2,200 ft.

Palmer Oil Corp. No. 1 Houser, SE NW SW sec. 13-30-3e. S.D. 2,930 ft.

Smith et al No. 1 Wilson, SE SW NW sec. 9-33-6. S.O. at 3,096 ft.; 600 ft. F.I.H. in 2 days; T.D. 3,149 ft.

Dickinson County

Fred Franks et al No. 1 Huffman, NW NW sec. 11-13-1e. S.D. 1,177 ft.

Ellsworth County

Cities Service et al No. 2 Schroeder "A," CNL SW sec. 29-17-9w. Drlg. 1,200 ft.

Finney County

Atlantic Ref. Co. No. 1 Nunn, C SE NE sec. 27-21-34w. T.D. 4,663 ft.; S.G. and good porosity.

Ford County

Sinclair Prairie Oil Co. No. 1 Young, CSL NE sec. 34-27-21w. Viola 5,350 ft.; dolomite at 5,512 ft., T.D.

Greenwood County

C. C. Whitaker et al No. 1 Bressner, NW SE sec. 8-26-13e. T.D. 1,498 ft.; 1,000,000 ft. gas est.

Jackson County

Haverback et al No. 1 Marble Bank, C NE NE sec. 26-9-14. T.D. 2,180 ft.; S.D.

Jewell County

Hollingsworth Bros. No. 1 Wolfe, NE SW SE sec. 14-4s-8w. S.D. 100 ft.

Kearny County

Tri-County Gas Co. No. 3 Campbell, NE SE NE sec. 19-25-35w. T.D. 2,679 ft.; 9,000,000 ft. gas.; comp.

Lane County

Phillips Pet. Co. No. 1 Kees, C SE SE sec. 3-19-30w. T.D. 2,566 ft.; lost circ.

Valerius & Marshall No. 1 Schierecks, C SE sec. 8-18-30w. R.U.R.

McPherson County

Darrah et al No. 1 Decker, SW SW SE sec. 12-21-2w. Arb. 3,557-61½ ft., T.D.: P.B. 2,980 ft.; drld. to 3,018 ft.; shot; est. 5,000,000 ft. gas.; comp.

Marion County

Johnson et al No. 1-A Miltz, SW SW SW sec. 24-17-4. Fsg. 1,130 ft.

Meade County

Barnett et al No. 1 Adams, NW SE sec. 22-34-30w. S.D. 69 ft.

Ness County

Schoeppel & Elmore No. 1 Moses, C SW NW sec. 10-18-25w. T.D. 4,349 ft.; R.U.S.T.

Pawnee County

Kessler Oil & Gas No. 1 Dirks, NW NW NE sec. 14-20-16w. Cellar.

Pratt County

Atlantic et al No. 1 Berg, NE NW NW sec. 22-26-14w. Cored 3,996-4,001 ft.; no shows; drlg. 4,420 ft.

Tidewater No. 1 Jarboe, C NL SE sec. 25-26-14w. Drlg. 1,980 ft.

Reno County

Carey et al No. 1 McPheeters, NE NW sec. 22-26-8w. Set 6-in. at 4,035 ft.; S.D. 4,040 ft.

L. E. Douglas et al No. 1 Durand SE SE SW sec. 3-23-5w. Drlg. 220 ft.

Rice County

Jones & Hinkle No. 1 Wesseler, SE SE NW sec. 34-18-10w. S.S.O. 2,980 ft.; drlg. 3,100 ft.

Maryiyn Oil Co. et al No. 1 Vincent, NW NW NE sec. 5-21-10w. T.D. 2,600 ft.; C.O.

Rooks County

Carter Oil Co. No. 1 Whitford, NE NE SE sec. 12-7-17w. Coring 2,935 ft.

Duwe & Farris No. 1 Sutor, SW SW NE sec. 28-9-19w. Drlg. 940 ft.

Graham et al No. 1 Fike, SW cor. sec. 9-9-17w. S.D. 3,384 ft.

F. O. Haun No. 1 Gavenhorst, SE SE SE sec. 7-6-16w. M.I.M.

Producers Oil Co. No. 1 Ham, SW SW NW sec. 25-7-19w. T.D. 1,000 ft.; C.O.

Rush County

Phillips Pet. Co. No. 1 John Kees, C SE SE sec. 3-19-20w. T.D. 2,500 ft.; S.D. for csg.

Russell County

Central Pet. Co. No. 1 Furthmeyer, SE sec. 22-14-15w. T.D. 3,289 ft.; D.&A.

Cities Service No. 1 Becker, C W½ W½ SW sec. 21-14-14w. Arb. 3,249 ft.; no shows at T.D. 3,283 ft.; D.&A.

J. J. Hall No. 1 Landon, SW SE sec. 11-15-14w. Drlg. 2,260 ft.

S. L. Parks No. 1 Gorham, SW SW NE sec. 19-15-15w. T.D. 3,352 ft.; 2,800 ft. O.I.H.; Pot. 341 B.O.P.D.

Phillips Pet. Co. No. 1 Miller, C NW SW sec. 29-13-14w. S.D. 2,233 ft.

R. H. Shields No. 1 Anschutz, SW SE sec. 2-14-13w. Drlg. 2,340 ft.

Smith & Unruh No. 1 Stielow, NW cor. sec. 32-11-14w. T.D. 2,552 ft.; S.D.

Twin Drlg. Co. No. 1 Koetkemeyer, SW SW SW sec. 12-15-12w. Drlg. 2,080 ft.

Web-Son O. & R. No. 1 Baxter, NW SE sec. 4-15-15w. Drlg. 2,135 ft.

Sedgwick County

D. M. Crowe et al No. 1 Murphy, SW SW SE sec. 34-29-1w. Rig.

Frank Hudson et al No. 1 Fulton, NE SE sec. 35-28-1e. Drlg. 1,858 ft.

Union O. & R. Co. et al No. 1 Howell, SW cor. sec. 6-29-1e. U.R. 2,843 ft.; to R.U.R.

Stafford County

Austin Drlg. Co. No. 1 Slade, NE NW sec. 35-25-12w. S.D. 955 ft.

Carlock No. 1 Richardson, SE SE sec. 10-24-11w. Drlg. 1,753 ft.

Stanolind O. & G. Co. No. 2 Siefker, NE SE NE sec. 3-22-12w. T.D. 3,601 ft.; pump 370 B.O. in 4 hrs.; pot. 2,221 B.O.P.D.; 42 gravity; comp.

Sumner County

Hapenny et al No. 1 Evers, SE SE NE sec. 27-31-2e. O.W.D.D.; T.D. 2,015 ft.; W.O.C.

Murphy et al No. 1 Tate, SE NW sec. 31-32-2e. T.D. 3,415 ft.; no shows; will pull 7-in. and U.R.

Thomas County

Connelly et al No. 1 fee, NW SE SE sec. 4-10-35w. T.D. 132 ft.; S.D.

Woodson County

Cleveland Oil Co. et al No. 1 Fidelity, SE SE NE sec. 34-25-15. T.D. 1,436 ft.; est. 8 B.O.P.D.

Hill & McClure No. 1 Kelley, NW SE SW sec. 22-26-14w. Drlg. 765 ft.

Kilby et al No. 1 Skellenger, NE SE sec. 25-23-14. T.D. 1,650 ft.; no shows; D.&A.

Ward McGinnis No. 1 State Bank, NW NE NE sec. 14-26-15. Top Miss. 1,403 ft.; T.D. 1,465 ft.; D.&A.

ARKANSAS

Columbia County

Standard Oil Co. of La. No. 1 W. P. Phillips et al, 660 ft. N and W. C sec. 15-17-19. Set 7-in. csg. 7,517 ft.; T.D. 7,603 ft.; perf. csg. 7,420-30 ft.; 100 shots; washed; comp., 74 bbls. 1st hr., 92 bbls. 2nd hr.; T.P. 1,800 lbs.; C.P. 2,200 lbs.; ⅜-in. ck.; shut in for tstg.

Desha County

Columbia Fuel Corp. No. 1 V. Cross, SW cor. sec. 34-8s-3w, formerly abd. 4,915 ft. Will P.B. to 4,823 ft. to test show in cuttings at about 4,825-35 ft. with D.S.T.

Hempstead County

H. D. Easton et al No. 1 LaGrone, sec. 5-12-26. Drlg. 3,136 ft.

Lafayette County

Standard Oil Co. of La. No. 2 McKean, 660 ft. SW cor. SW SE sec. 7-16s-22w. Drlg. sh. 4,085 ft.

Little River County

Joe G. Strahan et al No. 2 Dierks Lbr. Co. Top L. 2,425 ft.; S.D. 2,497 ft.

Lonoke County

J. F. Russell No. 1 Gunter, sec. 17-5n-10w. Drlg. 820 ft.

Miller County—Rodessa

F. W. Burford No. 1 Mitchell, sec. 11-20-28. Comp., 10 B.P.H.; ¼-in. ck.; C.P. 700 lbs.; set 5½-in. csg. 6,110 ft.; T.D. 6,145 ft.

F. W. Burford No. 1 E. B. Mitchell, SE cor. SW SW sec. 2-20-28. Set 10¾-in. csg. 810 ft.

F. W. Burford No. 2-B Thomas, sec. 12-20-28. Set 5½-in. csg. 6,123 ft.; perf. 6,062-6,115 ft.; comp., 35 B.P.H. open tbg.; T.P. 0 lbs.; C.P. 200 lbs., T.D. 6,125 ft.

F. F. Earles No. 1 General American Life Ins. Co., sec. 20-14-26. S.D. 1,232 ft.

Sam Killingsworth No. 1 Greer, sec. 11-20-28. Drlg. anhy.&L. 5,785 ft.

Kroll & Travis No. 2 Dickinson, 330 ft. NW cor. SE NW sec. 11-20-28. Drlg. 4,465 ft.

John Kraker No. 1-C Mitchell, sec. 10-20-28. Set 5-in. csg. 6,188 ft.; T.D. 6,190 ft.; comp., 30 B.P.H., ½-in. ck.; T.P. 160 lbs.; C.P. 175 lbs.; perf. 6,130-54 ft.

Red Iron Drlg. Co. No. 1 Mitchell, sec. 2-20-28. Drlg. L. 5,043 ft.

Texarkana Drlg. Co. No. 1 Capps, sec. 10-20-28. Drlg. sh.&L.&anhy. 5,812 ft.

Texas Canadian Oil Corp. No. 2 Thomas, NE cor. NW SE sec. 12-20-28. Reperf. 6,108-16 ft., 6,125-32 ft., and 6,146-53 ft.; swbd. approx. 25 bbls. oil; treated with 3,000 gal.; T.D. 6,156 ft.; S.D. 5,007 ft.

Nevada County

Union Drlg. Co. No. 1 Fuller, SE NE SE sec. 6-13-21. D.&A. red sdy. sh. 1,433 ft.

B. L. Webb No. 1 Boswell, sec. 5-14-20. Set 10-in. csg. 63 ft.

Bruce E. Wallace No. 2 Haynie, SE cor. SE NE sec. 5-14-21. Sdy. sh. 1,194-1,204 ft.; tstd. inud, S.W. and oil 1,198-1,214 ft.; 30 min.; W.O.: T.D. 1,214 ft set 6-in. csg. 1,198 ft.; swbd. est. 10 bbls. oil; W.O.S.R. 1,214 ft.

Pike County

Bruce E. Wallace No. 1 Tilyeu, sec. 26-8s-24w. S.D. 330 ft.

Pulaski County

Coker Oil Corp. No. 1 Stone, sec. 36-3n-11w. Set 12½-in. csg. 108 ft.

A. L. Kitselman, No. 2 A. L. Kitselman Jr., SE SE SW sec. 2-1s-13e. Drlg. hd. blk. slate 2,900 ft.

Union County—Schuler

Alice Sydney Oil Co. No. 2 Powledge, sec. 7-18-17. Jones sd. 7,610-50 ft.; set 7-in. csg. 7,692 ft.; T.D. 7,700 ft.; perf. 7,619-25 ft.; comp., 80 B.P.H., ¾-in. ck.; T.P. 700 lbs.; C.P. 900 lbs.

Alice Sydney Oil Co. No. 3 Powledge, SW cor. SE SE sec. 7-18-17. Jones sd. 7,608-43 ft.; 7-in. csg. 7,689 ft.; T.D. 7,700 ft.; perf. 7,619-25 ft.; comp., 79 B.P.H., ¾-in. ck.; T.P. 300 lbs., C.P. 800 lbs.

Alice Sydney Oil Co. No. 4 Powledge, SW cor. NW SE sec. 7-18-17. R.U.

Atlantic Ref. Co. No. 1 Dumas, NW cor. NE NW sec. 21-18-17. Drlg. 100 ft.

E. M. Jones et al No. 2-A Murphy, sec 19-18-17. Jones sd. 7,628-79 ft.; 7-in. csg. at 7,599 ft.; T.D. 7,610 ft.; comp.; 283 bbls. 21 hrs., ¼-in. ck.; T.P. 800 lbs.; C.P. 850 lbs.

E. M. Jones No. 1 Rogers, SW SW sec. 16-18-17. Drlg. red&gr. sh. 5,160 ft.

Lion Oil Ref. Co. No. 1 Clarence, SW cor. Lot 7, SW sec. 7-18-17. R.U.

Lion Oil Ref. Co. No. 1 Marcus, sec. 18-18-17. Cg. 7,623 ft.

Lion Oil Ref. Co. No. 1 Marvin, NE cor. Lot 7, SW sec. 7-18-17. R.U.

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The most important pipelines the world over are laid in trenches dug by Buckeye Ditchers.
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For trench from 14½" to 24" wide, 5½' deep. Engineered for real pipeline service. Lots of speed and power, and built to stand up under hard digging.
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THE BUCKEYE TRACTION DITCHER COMPANY
FINDLAY, OHIO

Lion Oil Ref. Co. No. 2 Mayfield, Lot 2, sec. 18-18-17. Reaming 7,631 ft.

Lion Oil Ref. Co. No. 8 Mayfield, sec. 18-18-17. Drlg. rd. and gr. sh. 5,843 ft.

Lion Oil Ref. Co. No. 4 Mayfield, C Lot 3, NW sec. 18-18-17. Set 10-in. csg. 2,300 ft.

Lion Oil Ref. Co. No. 1 Edna Morgan, NE cor. Lot 5, NW sec. 18-18-17. Jones sd. 7,569-7,630 ft.; 7-in. csg. 7,670 ft.; T.D. 7,682 ft.; perf. 7,590-7,611 ft.; comp., 381 bbls. 21½ hrs., ¼-in. ck.; T.P. 840 lbs.; C.P. 1,350 lbs.; T.D. 7,682 ft.

Lion Oil Ref. Co. No. 2 Edna Morgan, sec. 18-18-17. Jones sd. 7,569-7,624 ft.; ran 7-in. csg. 7,665 ft.; perf. 7,596-7,616 ft.; comp., 435 bbls. 22½ hrs., ¼-in. ck.; T.P. 825 lbs.; C.P. 875 lbs.

Lion Oil Ref. Co. No. 6-B Edna Morgan, sec. 18-18-17. Drlg. red sdy. sh. 3,930 ft.

Lion Oil Ref. Co. No. 1 Nelson, sec. 18-18-17. Drlg. rd. and gr. sh. 6,002 ft.

Marine Oil Co. No. 5 fee, sec. 17-18-17. Set 7-in. csg. 7,800 ft.; T.D. 8,328 ft.

Marine Oil Co. No. 6 fee, sec. 17-18-17. 7-in. 7,584 ft.; T.D. 7,595 ft.

Phillips Pet. Co. No. 3 Justiss, Lot 6, sec. 18-18-17. Top Jones sd. 7,506 ft.; top L. 7,609 ft.; cd. 60 ft. sat. L. in Reynolds L.; set 7-in. csg. 7,800 ft.; T.D. 8,328 ft.

Phillips Pet. Co. No. 3 Marine Oil Co., sec. 20-18-17. Jones sd. 7,515-66 ft.; 7-in. csg. 7,630 ft.; T.D. 7,650 ft.; comp., 842 B.P.D. on 24/64-in. ck.; T.P. 500 lbs.; C.P. 200 lbs.; T.D. 7,650 ft.

Phillips Pet. Co. No. 4 Marine Oil Co., sec. 20-18-17. Top Jones sd. 7,516 ft.; top oolitic L. 7,605 ft.; T.D. 7,640 ft. set 7-in. csg. 7,629 ft.; perf. 7,529-57 ft.; comp., 510 B.P.D., 24/64-in. ck.; T.P. 300 lbs.; C.P. 300 lbs.; T.D. 7,640 ft.

Phillips Pet. Co. No. 5 Marine Oil Co., sec. 20-18-12. Set 7-in. csg. 7,650 ft.; drld. to 7,650 ft.

Phillips Pet. Co. No. 3 Marks, C Lot 2, Drlg. rd. and gr. sh. 6,714 ft.

Union County—Other

Ark. Southern Oil Corp. No. 3-A Simmons, sec. 15-18-13. Set 10-in. csg. 162 ft.

J. R. Lockhart No. 1 Rauliston, sec. 12-17-14. R.U.; W.O.

Joe Modisette et al No. 1 Union Sawmill Co., sec. 8-18-12. Drk.

W. D. Wingfield, Tr. No. 2 Kidd Est., SE cor. NW SW sec. 15-18-13. Sd. S.D. 2,257-2,300 ft.; set 6-in. csg. 2,250 ft.; T.D. 2,300 ft.; W.O.S.R.

LOUISIANA

N. LOUISIANA WILDCATS

Bienville County

Gulf Ref. Co. No. 1 Goodpine, sec. 25-14-8. Drlg. hd. sdy. L. 10,080 ft.

Producers O. & G. Co. No. 1 Locke, NE cor. sec. 9-15-10. O.W.W.O.; old T.D. 2,960 ft.; rmd. to 800 ft.; S.G.; hole cleaned out; sat. L. 2,952-53 ft.; set 8⅝-in. csg. 2,947 ft.; tsted dry; drlg. sh.&L. 3,665 ft.

Bossier Parish

C. H. French No. 3 Larkin, SW cor. NW SW sec. 14-19-11. Set 6-in. csg. 364 ft.; W.O.C.

C. H. French No. 4 Larkin, SW cor. NW SW sec. 14-19-11. Set 6-in. csg. 367 ft.

Premier Inv. Co. No. 1 McDade, SE SW NE sec. 28-19-11. S.D. 2,264 ft.

Sloan, Lloyd et al No. 1 Sherrill, sec. 12-19-12. T.D. 780 ft.; set 5½-n. 778 ft.; treated with 1,000 gals. acid.; swbg.

Triangle Drlg. Co. No. 4-A Skannel, NE SW sec. 13-17-12. Set 5½-in. csg. 3,009 ft.; T.D. 3,140 ft.; no ga.; S.I.; W.O. stg.

Triangle Drlg. Co. No. 4 Thigpen-Herold, 665 ft. S line, 667 ft. W line, NE SE sec. 13-17-12. Drlg. L.&sh. 2,984 ft.

Union Prod. Co. No. 3-C Skannel, NE cor. sec. 13-17-12. D.S.T. 3,005-21 ft. tstd. 60 ft. mud cut with oil; 520 ft. oil; 420 ft. S.W. in 15 min.; O. sd. 3,015-21 ft.; rng. Schlumberger sur.

Union Prod. Co. No. 2 Thigpen-Herold, sec. 13-17-12. T.D. 3,162 ft.; D.S.T. 2,980-3,030 ft.; rec. 400 ft. oil and 120 ft. mud and oil in 21 min.; set 7-in. csg. 3,109 ft.; P.B. 3,132 ft.; treated 2,000 gal. acd.; no ga.; S.I.; W.O. stg.

Caddo Parish

R. E. Allison No. 1 Ellerbee et al., NW cor. sec. 27-18-14. Drk.

Carroll et al No. 1 Hart, NW sec. 26-21-16. R.U.

L. I. Davis No. 4 Stiles, sec. 7-20-15. Set 6-in. at 1,016 ft.

J. T. Driscoll No. 4 Self, NE SE sec. 10-20-15. R.U.

W. D. Flynn No. 4 Natalie, SE cor. sec. 10-21-16. Set 7-in. at 998 ft.; W.O.; T.D. 1,027 ft.

A. R. Hancock No. 3 Standard fee, SE cor. sec. 12-12-16. Set 7-in. csg. 1,025 ft.; T.D. 1,053 ft.

Magnolia Pet. Co. No. 26 Dillon, SW cor. E½ NE sec. 23-21-15. Drlg. sh. 340 ft.

Midfield Oil Co. No. 1 Muslow, C sec. 6-20-15. Set 6⅝-in. csg. at 1,350 ft.; comp., 10 B.P.H. open tbg.; 2% S.W.; T.D. 1,600 ft.

Petroleum Heat & Power Co. No. 1 Wemple, NW cor. sec. 14-20-15. Set 6-in. csg. 2,185 ft.; S.D. 2,605 ft.

Triple M Oil Co. No. 1 Boisseau, sec. 34-21-16. Cg. 1,925 ft.

G. H. Vaughn No. 1 Stiles, sec. 21-21-16. Set 6-in. csg. 1,016 ft.; W.O.L.

Nat Weisman No. 1 Stiles, NE cor. sec. 27-21-16. Drlg. 750 ft.

Caldwell Parish

E. T. Oakes et al No. 1 Kyles, sec. 18-11-3e. Set 12-in. csg. 467 ft.; S.D.

Catahoula Parish

G. C. Foster et al No. 1 Peck, sec. 38-10-8e. S.D. 645 ft.

Claiborne Parish

Harry Fotiades No. 2 King, C NE NW sec. 11-20-5. Drlg. sh. 3,241 ft.

Harry Fotiades No. 1 Whitman, C NE NW sec. 2-20-5. Drlg. anhy. 3,965 ft.

Gulf Oil Corp. No. 4 Patton, SW cor. NW sec. 11-20-5. Drlg. 110 ft.

Love Pet. Co. No. 1 English, sec. 29-21-4. Set 5½-in. csg. 5,109 ft.; T.D. 5,132 ft. Comp., 78 B.P.H., ¾-in. ck.; T.P. 100 lbs.; C.P. 400 lbs.

Magnolia Pet. Co. No. 2 Lloyd, sec. 2-20-5. Drlg. sh.&L. 4,970 ft.

Morelock & Bevil No. 1 Kilgore, sec. 12-20-5. Sat. L. 5,332-38 ft. and 5,342-46 ft.; set 5½-in. csg. 5,330 ft.; T.D. 5,346 ft. Comp., 292 bbls. in 8 hrs. on ½-in. ck.; T.P. 60 lbs.

Morelock & Bevil No. 2 Kilgore, C NW NE sec. 12-20-5. Set 10¾-in. csg. 901 ft.

W. H. North et al No. 1 Patton, sec. 12-20-5. Comp., 307 bbls. in 18 hrs., 17/64-in. ck.; T.P. 100 lbs.; 5½-in. csg. 5,264 ft.; T.D. 5,285 ft.

Oakes et al No. 1 Kilgore, NE cor. SE sec. 28-21-15. D.S.T. 4,188-4,225 ft.; tstd. dry in 5 min.; set 5¾-in. csg. 5,290 ft.; TD. 5,313 ft.; swbg.

E. T. Oakes et al No. 4 H. W. Patton, C. NW SW sec. 12-20-5. R.U.

R. P. Oden No. 1 Henry, C NE NE sec. 29-21-4. Set 10¾-in. csg. 800 ft.

Sells Pet. Co. No. 2-A Patton, C NE NE sec. 11-20-5. R.U.

Skelly Oil Co. No. 1 Enlee, sec. 28-21-4. Drlg. sh.&sd. 5,163 ft.

Sklar Oil Corp. No. 2 Kilgore, C NW SW sec. 11-20-5. Set 10¾-in. csg. 775 ft.

Sloan & Zook Oil Co. No. 1 Patton, C NW SW sec. 7-20-5. Set 10¾-in. csg. 885 ft.

Sloan & Zook No. 7 Patton, sec. 1-20-5. Set 5½-in. csg. 5,311 ft. Comp., 15 B.P.H., open tbg.; T.P. 30 lbs.; set on packer; perf. csg. 5,250-68 ft.; 92 shots; T.D. 5,311 ft.

Texas Canadian Oil Co. No. 1 Fowler, sec. 32-21-4. Sat. L. 5,237 ft.; rng. csg. 5,255 ft.

Texas Co. No. 1 Tippett, sec. 33-21-4. Sat. L. 5,303-10 ft.; set 5-in. csg. 5,293 ft.; tag. 5,318 ft.; W.O.S.R.

Union Prod. Co. No. 2 Brownfield, sec 5-19-5. T.D. 10,759 ft.; hole off 5 deg. P.B. 10,561 ft.; drlg. past underreamer 10,695 ft.

Union Prod. Co. No. 1 Coleman, sec. 43-7-9e. T.D. 5,847 ft.; perf. csg. 5,798-5,804 ft.; comp.; gasser.

G. H. Vaughn No. 1 English, C NW SW sec. 30-21-4. Set 8⅝-in. csg. 835 ft.

Weaver Oil Corp. No. 2 Edmonds, sec. 16-20-5. S.D. repair rig 5,744 ft.

Weaver-Perry Oil Co. No. 1 Patton Est., sec. 11-20-5. Sat. L. 5,269-72 and 5,274-77 and 5,282-92 ft.; 5½-in. csg. 5,268 ft.; tstg.

Concordia Parish

Morrison & Co. No. 1 Winston, sec. 43-7-9e. Drlg. 1,295 ft.

De Soto Parish

S. S. Alexander No. 1 Stoll, NE cor. sec. 5-12-16. O.W.W.O.; old T.D. 6,002 ft.; set short string 5½-in. csg. 5,479 ft. reperf. 5,420-40 ft.; tstg. S.W. 5,440 ft. and recmtd. perf.

Coleman et al No. 1 Franklin, NW cor. NE SE sec. 29-12-11. Set 10-in. csg. 120 ft.

Hunter Co. No. 1 Parker, sec. 26-12-16. Set 9⅝-in. csg. 1,380 ft.; well blew out at 2,912 ft.; cored strks. oolitic L. show. gas 5,024-82 ft.; cg. 5,082 ft.

La. Seaboard Oil Ref. Co. No. 1 Lawrence, sec. 36-12-14. Set 8¼-in. csg. 2,031 ft.; tstd. dry; cg. 2,868 ft.

Pet. Heat & Power Co. No. 1-B Kavanaugh, sec. 12-11-12. O. sd. 2,804-05 and 2,812-16 ft.; set 5-in. csg. 2,817 ft.

Petroleum Heat & Power Co. No. 2 Kavanaugh, NE cor. NW SW sec. 7-11-11. Drlg. 1,200 ft.

Pet. Heat & Power Co. No. 1 Matthews, sec. 29-12-11. Tstd. dry 3,950 ft.; P.B. 2,400 ft.; to test old T.D. 4,003 ft.

Pet. Heat & Power Co. No. 1 Rives, sec. 20-12-11. Drlg. sh. 3,165 ft.

Pet. Heat & Power No. 1 Williams, W. R., NW NE sec. 13-11-12. (Cor.); D.S. T. 2,800-18 ft.; S.G.; 7-in. csg. set 2,800 ft.; tstg. 2,827 ft.; W.O.; T.D. 2,827 ft.; tstd. S.G.; arng. test 2,827 ft.

Texas Co. No. 2 White, SW NE sec. 24-12-12. Set 4½-in. csg. 835 ft.; S.D. 890 ft.

Franklin Parish

Southern Star Pet. Co. No. 3 Grayson, sec. 36-12-6e. S.D. 1,900 ft.

Grant Parish

R. D. Bevil et al No. 3 Holmes, SW SW sec. 17-9-1e. Set 10-in. csg. 62 ft.; cg. 1,602 ft.

K-M Pet. Co. No. 1 Holmes, sec. 20-9-1e. S.D. 850 ft.

C. L. Thompson No. 1 McNeely Est., NE cor. sec. 10-6-3w. Drlg. sd.&sh. 3,080 ft.

La Salle Parish

Cupples et al No. 1 King, sec. 25-10-1e. Set 5-⅛-in. csg. 1,540 ft.; S.D. 1,549 ft.

Pet. Heat & Power Co. No. 1 Biggs-Cockerham, NW cor. SE SE sec. 26-10-1e. Comp.; pump 10 B.P.D.; 6-in. csg. 1,520 ft.; T.D. 1,532 ft.

Lincoln Parish

Harry Fotiades No. 1 Henry, C NW NE sec. 5-20-4. Drlg. 2,150 ft.

O K Oil Co. No. 1 Lowery, 1,980 ft. N L, 635 ft. W L, sec. 7-20-4. Drk.

Natchitoches Parish

Roy Raines et al No. 1 Prudential Life Ins. Co., sec. 22-10-9w. Set 12-in. csg. 70 ft.; T.D. 1,250 ft.; fsg.

W. P. Ryan et al No. 1 Lambert, sec. 4-8-9. T. Blossom sd. 2,952 ft.; drlg. sh. &L. 3,375 ft.

Red River Parish

Glassell & Whitehurst No. 1 LeLong, NE NW NE sec. 25-12-11. S.D. 2,874 ft.

R. M. Hutchins No. 1 Sample, sec. 11-14-11. Cg. 1,758 ft.

Monte Oil Co. No. 1 McClelland, NW NW sec. 24-13-11. D.S.T. 967-74 ft. S.G.; D.S.T. 1,570-98 ft., small S.G.; drlg. sdy. sh. 1,641 ft.

Sabine Parish

Hare et al No. 1 Stoby, SW cor. SE sec. 10-8-12. R.U.

Hunter Co. No. 3 Bowman-Hicks, sec. 15-7-13. Set 10-in. csg. 48 ft.

W. L. McClanahan No. 1 Frost Lbr. Co., sec. 22-9-13. 16-in. at 52 ft.

Major Oil Co. No. 3 Henry, NE cor. NW SW sec. 12-7-13. R.U.

F. W. Martin Drlg. Co. No. 1 Sabine Lbr. Co., C W½ NE NE sec. 26-7-14. Spudded.

H. N. Morris No. 1 Irving & Bishop, C NW NW sec. 18-7-12. Recmtd. 6-in. csg.; T.D. 2,495 ft.; W.O.S.R.

Plymouth Oil Corp. No. 1 Kezerle, sec. 3-7-13. Tstd. S.W. 2,494 ft.; S.D.

W. L. Posey No. 1-A Ramirez, sec. 12-7-13. Set 6-in. at 2,147 ft.; drlg. 2,235 ft.

Albert Reich No. 1 Glaque, 330 ft. NE cor. SE NE sec. 27-7-14. R.U.

Republic Gas Co. No. 1 Whitney Corp., sec. 8-9-13. S.D. hd. sh.&strks. L. 8,929 ft.

Royal O. & G. Co. No. 3-A Frost Lbr. Co., C NE SE sec. 19-9-13. Set 7-in. csg. 1,540 ft.; T.D. 1,961 ft.; comp., pump 50 B.P.D.

Sutton-Zwolle Oil Co. No. 1 Sabine Lbr. Co., SE cor. NW NE sec. 23-7n-14w Blew in while cg.; installed blowout preventer; plugged off D.S.; comp., 41 B.P.H., ¾-in. ck.; D.S. pres. 975 lbs.; T.D. 4,208 ft.

J. J. Watson No. 1 Sabine, sec. 12-7-13. Set 6-in. csg. 2,145 ft.; tstg. 2,510 ft.

Lee Whitehurst No. 6 Frost Lbr. Co., sec. 29-9-13. Set 6⅝-in. csg. 1,589 ft.; treated with 2,000 gal. acd.; W.O.S.R.

Tensas Parish

H. V. Schumacker No. 4 Mount Plantation, sec. 39-11-12e. S.D. 2,410 ft.

Union Parish

Standard Oil Co. of La. No. 1 Frost Lbr., sec. 14-21-1e. T.D. 9,637 ft.; D.S. stuck 9,625 ft.

Webster Parish

S. W. L. Backus No. 4 Pardee, sec. 3-22-11. Cg. 2,711 ft.

Fohs Oil Co. No. 1 Crichton, sec. 33-21-10. Drlg. sh.&sd. 7,535 ft.

Hunt Oil Co. No. 6 Babb, C NE SW sec. 14-21-10. Set 7-in. 8,488 ft.; T.D. 8,505 ft.

Hunt Oil Co. No. 7 Babb, C NW SE sec. 14-21-10. Poor Holloway sd. 5,557-61 ft. and 5,582-86 ft.; set 9⅝-in. csg. 5,750 ft.; tsted dry 6,155 ft.; swbg. test 5,800 ft.

Hunt Oil Co. No. 1 Bodcaw, C SW NE sec. 33-21-10. R.U.

Hunt Oil Co. No. 9 Davis, sec. 14-21-10. Drlg. L.&sh. 5,242 ft.

Hunt Oil Co. and Ray Drlg. Co. No. 2 Bodcaw, C NW NE sec. 33-21-10. Drlg. sh. 3,441 ft.

Hunt Oil Co. No. 3 Webb, C NW SW sec. 13-21-10. Set 7-in. csg. 5,956 ft.; T. Tr. Pk. 5,647 ft.; Holloway sd. 5,783-5,805 ft.; tstg. 6,155 ft.

Magnolia Pet. Co. No. 1 Crichton Unit, sec. 33-21-10. Drlg. sd.&sh. 5,233 ft.

Magnolia Pet. Co. No. 3 Crichton, 795 ft. N line, 763 ft. W line, sec. 33-21-10. Drlg. sh. 2,670 ft.

Magnolia Pet. Co. and Ray Drlg. Co. No. 1 Stewart-Crichton, sec. 33-21-10. Cg. 5,885 ft.

Magnolia Pet. Co. No. 1 Robbins Unit, sec. 21-21-10. Drlg. sd.&sh. 5,885 ft.

Magnolia Pet. Co. No. 1 Sexton Unit, NW SE sec. 32-23-9. Cd. Bodcaw sd.; no show; cd. sd. 8,293-8,310 ft.; gas odor; slight show gas and dist.; cg. hd. sdy. L. 8,599 ft.; ran Schlumberger 8,521 ft.; cd. sd. 8,899-8,906 ft.; gas odor; sd. at 9,007 ft.; dist odor; T.D. 10,462 ft.; set 7-in. 9,464 ft.

Midstates Oil Corp. No. 1 Welori Lbr. Co., C NW NW sec. 3-20-10. Top Tr. Pk. 6,029 ft.; no Holloway sd.; set 9⅝-in. csg. 6,121 ft.; drlg. sdy. sh. 7,725 ft.

Morgan et al No. 1-A Hope, C NW NW sec. 25-21-10. T. Bodcaw 8,115 ft.; drlg. sd. 8,210 ft.

Ohio Oil Co. No. 3 Bodcaw, Acct. 4, sec. 28-21-10. Bodcaw sd. 8,216-53 ft.; rmg. 8,280 ft.

Ohio Oil Co. No. 50 Bodcaw, Acct. 3, sec. 34-21-10. Sat. Holloway sd. 5,724-55 ft.; set 5½-in. csg. 5,725 ft.; T.D. 5,760 ft.

Ohio Oil Co. No. 4 Cox, Acct. 2, C SW sec. 15-21-10. Drlg. sdy. L.&sh. 7,746 ft.

Ohio Oil Co. No. 1 Gray, NW cor. SE NW sec. 28-21-10. Drlg. sh. 7,746 ft.

Ohio Oil Co. No. 24 Gray, NE cor. sec. 35-21-10. Drlg. sh. 7,687 ft.

Ohio Oil Co. No. 1 A. H. Gray, Acct. 3, sec. 26-21-10. Drlg. L.&sh. 6,691 ft.

Ohio Oil Co. No. 1 Jackson, sec. 27-21-10. No Holloway sd.; set 9⅝-in. csg. 5,600 ft.; drlg. sd. 7,407 ft.

Ohio Oil Co. No. 1 Sandlin, sec. 27-21-10. No Holloway sd.; set 9⅝-in. csg. 5,574 ft.; drlg. sd.&sh. 7,427 ft.

Ohio Oil Co. and Union Prod. Co. No. 1 Tillman-Gleason, sec. 28-21-10. Drlg. L.&sh. 5,714 ft.

Oliphant No. 3 Banks, sec. 34-21-10. Top Tr. Pk. 5,797 ft.; drlg. sd. 8,333 ft.

A. G. Oliphant No. 2 Hodges, C NW SE sec. 34-21-10. 9⅝-in. csg. 5,689 ft.; tstd. dry 5,859 ft.; drlg. limey sh. 6,819 ft.

A. G. Oliphant No. 1 Stewart, sec. 33-21-10. Set 7-in. 8,461 ft.; T.D. 8,532 ft.

Stanolind O. & G. Co. No. 1 Pardee Co., SW NE sec. 36-21-10. "D" stringer 8,473-98 ft.; Bodcaw sd. 8,565 ft.; cg. shly. sd. 8,606 ft.

Union Prod. Co. No. 1 Josey, sec. 27-21-10. Drlg. shly. L. 5,963 ft.

SOUTH LOUISIANA FIELDS

Abbeville—Vermilion Parish

Continental Oil Co. No. 1 Franciol, sec. 67-12s-3e. R.U.

Continental Oil Co. No. 1 Hebert, sec. 67-12s-3e. 10¾-in. csg. 1,510 ft.; T.D. 7,448 ft.; D.S. stk.; fsg.; P.B. 7,301 ft.; to sdtrk.; T.D. 9,501 ft.; P.B. 8,100 ft. in. csg. 6,460 ft.; perf. csg. 6,424-28 ft.; flwd. 388 bbls. in 18 hrs.; ¼-in. ck. Continental Oil Co. No. 1 Motty, sec. 67-12s-3e. T.D. 8,242 ft.; P.B. 6,460 ft.; 7-in. csg. 6,460 ft.

Anse La Butte—St. Martin Parish

Butte Oil Co. No. 2 Billeaud, sec. 117-9s-5e. Drlg. 50 ft.

Paul Fly et al No. 1 Moresi, sec. 118-9s-5e. T.D. 1,143 ft.; run 7-in. csg.

Bateman Lake—St. Mary Parish

Texas Co. No. 1 Wax Bayou, sec. 21-16s-12e. Driving piling.

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Baton Rouge—East Baton Rouge Parish

Wm. Helis No. 2 Duplantier, sec. 65-7s-1w. Drk.
Wm. Helis No. 3 La. State, sec. 65-7s-1w. T.D. 7,350 ft.; P.B. 3,000 ft.; abd.
Wm. Helis No. 1 Harry Nelson, sec. 36-7s-1w. R.U.

Bay St. Elaine—Terrebonne Parish

F. J. LeBlanc No. 2 Wurzlow, sec. 17-22s-18e. S.D. 816 ft.
Texas Co. No. 17 State, sec. 18-22s-18e. T.D. 6,000 ft.; run survey.

Bayou Blue—Iberville Parish

Humble O. & R. Co. No. 6 Wilbert Sons Lbr. Co., sec. 66-9s-11e. 7-in. csg. 6,982 ft.; T.D. 7,006 ft.; made 28-min. D.S.T. 6,990-7,006 ft.; flwd. oil and wash wtr.; recvd. 2,600 ft. of 35-grav. oil; swbd. some oil; would not flow; pulling tbg.

Bayou De Allemands—St. Charles Parish

Amerada Pet. Corp. No. 1 Gheens Realty Co., sec. 56-15s-20e. T.D. 7,010 ft.; P.B. 6,398 ft.; sdtrkd.; D.S. stk. at 6,502 ft.; P.B. 3,000 ft.; prep. to sdtrk. at 3,162 ft.
Amerada Pet. Corp. No. 4 State, sec. 13-15s-20e. 13⅜-in. csg. 1,976 ft.; drlg. sdy. sh. 7,734 ft.
Amerada Pet. Corp. No. 2 St. Charles Ld. Co., sec. 13-15s-20e. R.U.

Caillou Island—Terrebonne Parish

Texas Co. No. 29 State, sec. 17-23s-20e. Loc.

Cameron Meadows—Cameron

Burton-Sutton Oil Co. No. 23 School Ld., sec. 16-14s-13w. T.D. 5,786 ft.; 7-in. csg. 5,323 ft.; tstd. S.W.; P.B. to sidetrack;; T.D. 2,959 ft.; swbg. oil and S.W.
Burton-Sutton Oil Co. No. 24 School Ld., sec. 16-14s-13w. Drk.
Burton-Sutton Oil Co. No. 25 School Ld., sec. 16-14s-13w. Drlg. sh. 4,604 ft.
Magnolia Pet. Co. No. 22 Cameron Meadows, sec. 21-14s-13w. T.D. 4,242 ft.; 9⅝-in. csg. 4,242 ft.; perf. csg. 4,221-30 ft.; flwg. P.L. oil; went dead; P.B. 4,232 ft.; drld. out to T.D. 4,321 ft.; tstd. 860 lbs. press.; mud, some oil.

Cheneyville—Rapides Parish

Amerada Pet. Corp. No. 5 Well Ld. Co., sec. 53-1s-2e. Drlg. sh. 5,133 ft.
Texas Co. No. 3 Well Ld. Co., sec. 53-1s-2e. Drlg. sh. 6,707 ft.

Charenton—St. Mary Parish

Commerce Oil Co. No. 1 Dalph Parro, sec. 31-13s-10e. Cd. oil sd. 6,658-95 ft.; 9⅝-in. csg. 6,695 ft.; drlg. sh. 7,655 ft.
Pan American Prod. Co. No. 6 Laws, sec. 25-13s-9e. T.D. 2,605 ft.; 7-in. csg. 2,621 ft.
Pan American Prod. Co. No. 8 Laws Realty, sec. 25-13s-9e. Drk.

Choctaw—Iberville Parish

La. Crusader Oil Co. No. 2 Schwing, sec. 29-8s-11e. Cd. oil sd. 8,250-56 ft.; S.D. 8,258 ft.

Creole—Cameron Parish

Superior Oil Co.-Pure Oil Co. No. 2 State, Gulf of Mexico. Drlg. silt 85 ft.

Darrow—Ascension Parish

Darrow Oil Co. No. 1 Dennis, sec. 68-10s-2e. T.D. 2,150 ft.; S.D.
Humble O. & R. Co. No. 18 Community, sec. 30-10s-2e. Drlg. sd. 5,230 ft.
Kiva Oil Co. No. 1 Duplessis, sec. 69-10s-2w. S.D. 2,523 ft.

Dog Lake—Terrebonne Parish

Texas Co. No. 21 State, sec. 5-22s-16e. T.D. 7,174 ft.; P.B. 5,490 ft.; sdtrkd.; T.D. 6,882 ft.; 10¾-in. csg. parted; fsg.

Four Isle—Terrebonne Parish

Texas Co. No. 19 State-Lake, sec. 17-23s-18e. T.D. 6,315 ft.; D.S. stk.

Gibson—Terrebonne Parish

Shell Pet. Corp. No. 1 Kuntz, sec. 40-17s-15e. R.U.
Shell Pet. Corp. No. 6 Pellican, sec. 20-17s-15e. Bldg. drk.

Fausse Point—Iberia Parish

Texas Co. No. 4 State, sec. 35-11s-8e. 18⅝-in. csg. 90 ft.; top sd. 7,912 ft.; top salt 6,595 ft.; T.D. 9,246 ft.; 7⅝-in. csg. 9,236 ft.; T.D. 9,435 ft.; 5½-in. csg. 9,345 ft.; perf. csg. 9,251-61 ft. made sqz. job; P.B. 9,261 ft.; set scrn. to test.

Garden Island—Plaquemines Parish

Texas Co. No. 29 State, sec. 38-23s-33e. Drlg. sh. 2,875 ft.

Hackberry—Cameron Parish

W. T. Burton No. 1 Duhon, sec. 29-12s-10w. R.U.
W. T. Burton No. 1 F. Lacy, sec. 22-12s-10w. Drlg. sd. 2,636 ft.
W. T. Burton No. 3 Lewis, sec. 22-12s-10w. R.U.; abd. loc.
Gulf Oil Corp. No. 1 Noble, sec. 22-12s-10w. Bldg. road.
Stanolind O. & G. Co. No. 8 Carter & Sweeney, sec. 22-12s-10w. R.U.
Stanolind O. & G. Co. No. 10 Carter & Sweeney, sec. 22-12s-10w. R.U.; (cor.).
Stanolind O. & G. Co. No. 1 Kaugh, sec. 28-12s-10w. Drk.
Superior Oil Co. No. 2 Benson, sec. 30-12s-10w. Drlg. sh. 746 ft.
Sutton Oil Co. No. 2 Ellender, sec. 22-12s-10w. R.U.R.
Texas Co. No. 24-B State, sec. 12s-9w. T.D. 8,052 ft.; blew out; stk. D.S.; hole cleaned out to 7,659 ft.
Union Sulphur Co. No. 1 Doiron, sec. 37-12s-10w. 7-in. csg. 4,876 ft.; T.D. 5,940 ft.; S.T.; T.D. 5,023 ft.; P.B. 5,000 ft.; drlg. in sdtrkd. hole, sh. 5,698 ft.

Horseshoe Bayou—St. Mary Parish

Texas Co. No. 2 State, sec. 37-17s-9e. Driving piling.

Jeanerette—St. Mary Parish

Herton Oil Co. No. 1-A Roane Sugar Co., sec. 38-13s-9e. Drlg. sh. 9,917 ft.

Jennings—Acadia Parish

F. W. Bennett No. 2 Brethern, sec. 41-9s-2w. Drlg. sh. 6,840 ft.
W. T. Burton No. 6 Roboria, sec. 41-9s-2w. Drlg. sd.&bldrs. 2,104 ft.
H. Fotiades No. 2 Washington Opelousas, sec. 41-9s-2w. 16-in. csg. 106 ft.; T.D. 6,659 ft.; 7-in. csg. 6,659 ft.; well blew out; cutting and pulling tbg.
Frio Oil Co. No. 1 Gulf fee, sec. 45-9s-2w. Drlg. sh.&shlls. 5,075 ft.
Frio Oil Co. No. 1 Iowa-Jennings, sec. 45-9s-2w. Drlg. sh.&shlls. 5,367 ft.
Lodak Oil Co. No. 5 J. Clement, sec. 46-9s-2w. T.D. 2,058 ft.; 6⅝-in. 1,740 ft.
T. G. Markley No. 1 Gulf Ld., sec. 45-9s-2w. Drlg. sh.&shlls. 6,326 ft.
W. S. Noble et al No. 1 Ed Prather, sec. 45-9s-2w. R.U.
Pet. Heat & Power Co. No. 1 Iowa-Jennings, sec. 45-9s-2w. T.D. 3,770 ft.; P. B. 1,055 ft.; to sdtrk.; drlg. sh. 1,379 ft.
Pet. Heat & Power Co. No. 1 Smith, sec. 45-9s-2w. S.D. 805 ft.
Stanolind O. & G. Co. No. 112 Crowley Oil & Mineral Co., sec. 48-9s-2w. Drlg. sh. 200 ft.
Stanolind O. & G. Co. No. 19 Houssiere-Latrelle, sec. 47-9s-2w. T.D. 6,448 ft.; P.B. 6,135 ft. to strtn. hole; T.D. 6,979 ft.; P.B. 6,700 ft.; P.B. and sdtrkg. 7,509 ft.; T.D. 7,917 ft.; 7-in. csg. 7,917 ft.; T.D. 8,438 ft.; rmg.
Superior Oil Co. No. 3 Jules Clement, sec. 46-9s-2w. Drlg. sd.&sh. 5,177 ft.
Superior Oil Co. No. 10 Leckelt, sec. 43-9s-2w. T.D. 5,256 ft.; run 7-in. csg.
Superior Oil Co. No. 13 Leckelt, sec. 42-9s-2w. T.D. 4,944 ft.; fsg.
Superior Oil Co. No. 14 Leckelt, sec. 42-9s-2w. Drlg. sh. 6,326 ft.
Victor Weisse No. 1 Clement, sec. 46-9s-2w. T.D. 3,247 ft.; 6⅝-in. csg. 3,032 ft. blew out; R.U. christmastree to test. failed to flow; tstg.

Lafitte—Jefferson Parish

Carter-Perrin & Brian No. 1 Lucien, Adams, sec. 9-17s-24e. Loc.
Texas Co. No. 10 Lafitte, sec. 17-17s-24e. T.D. 10,191 ft.; 7⅝-in. csg. 10,191 ft.
Texas Co. No. 1-B Madison, sec. 19-17s-24e. Cg. oil sd. 10,064 ft.
Texas Co. No. 3 Marrero Ld. Co., sec. 29-17s-24e. R.U.
Texas Co. No. 9 Rigolet-Cooperation Fur Co., sec. 29-17s-24e. Cd. oil sd. 10,106-11 ft.; T.D. 10,214 ft.; D.S. stk at 8,034 ft.; shot at 7,099 ft.; fsg.

Lake Barre—Terrebonne Parish

Texas Co. No. 16 State, sec. 32-21s-19e. Drlg. anhy. 3,313 ft.
Texas Co. No. 42 State-Lake, sec. 40-21s-19e. T.D. 6,704 ft.; D.S. stk.

Lake Long—Lafourche Parish

Pohs Oil Co. No. 4 State, sec. 64-17s-19e. 10¾-in. csg. 2,707 ft.; T.D. 10,239 ft.; 7-in. csg. 10,239 ft.; drlg. sh. 10,423 ft.

Leesville—Lafourche Parish

Wm. Helis No. 1-A City of New Orleans, sec. 35-21s-22e. Loc.

Lirette—Terrebonne Parish

Humble O. & R. Co. No. 1 Wurzlow, sec. 32-19s-19e. Top sd. S.G. 8,423 ft.; T.D. 8,560 ft.; 9⅝-in. csg. 8,521 ft.
Union Prod. Co. No. 1 Fundenburk, Unit 1, sec. 50-19s-19e. Drlg. sh. 10,685 ft.

Lockport—Calcasieu Parish

Continental Oil Co. No. 1 J. H. Moss, sec. 8-10s-9w. 10¾-in. csg. 986 ft.; drlg. sh. 5,273 ft.

New Iberia—Iberia Parish

Canal Oil Co. No. 10 Bernard, sec. 54-12s-7e. Drlg. sh.&L. 1,807 ft.
H. Fotiades No. 6 Gulf Ld., sec. 25-12s-7e. Drlg. sh. 3,478 ft.
Wm. Helis No. 10 Bernard, sec. 54-12s-7e. Drlg. sh.&L. 1,807 ft.
Wm. Helis No. 5 Bolivar, sec. 56-12s-7e. T.D. 4,337 ft.; salt; P.B. and sdtrkd. T.D. 3,594 ft.; 7-in. csg. 3,100 ft.; made sqz. job 3,070-60 ft.; P.B.; drlg. out to 3,145 ft.; swbd. dry; pig. scrn.
Wm. Helis No. 7 Bullock and Burke, sec. 25-12s-7e. Drlg. sd. 394 ft.
Wm. Helis No. 5 Schwing, sec. 56-12s-7e. T.D. 4,954 ft.; run 7-in. csg.; I.P. 456 B.P.D.; ¼-in. ck.
Texas Co. No. 4 Bryant, sec. 25-12s-7e. T.D. 5,054 ft.; 7-in. csg. 5,039 ft.; perf. csg. 4,310-45 ft.
Texas Co. No. 2 Burke, sec. 56-12s-7e. Drlg. S.W. sd. 4,478 ft.
Texas Co. No. 7 Duke, sec. 26-12s-7e. Drlg. sh. 3,320 ft.

North Crowley—Acadia Parish

Humble O. & R. Co. No. 1 R. C. Davis, sec. 45-8s-1e. R.U.
Humble O. & R. Co. No. 2 Habetz, sec. 45-8s-1e. T.D. 8,160 ft.; 7-in. csg. 8,150 ft.; tstg.
Humble O. & R. Co. No. 1 Smith, sec. 44-8s-1e. 7-in. csg. 8,287 ft.; T.D. 8,855 ft.; abd.

Port Barre—St. Landry Parish

Emerson Oil Co. No. 5 Sibille Oil Co., sec. 20-6s-5e. T.D. 3,475 ft.; 5-in. csg. 3,470 ft.; tstd. S.W.
T. C. Markley No. 1 Lahaye, sec. 4-6s-5e. Drlg. sh. 3,400 ft.
Pan American Prod. Co. No. 1 Lahaye, sec. 4-6s-5e. R.U.
Y. D. Spill No. 1 Gaudet, sec. 4-6s-5e. Drlg. sd.&gvl. 950 ft.
Texas Co. No. 22 Botney Bay Lbr. Co., sec. 4-6s-5e. T.D. 3,569 ft.; P.B. 3,434 ft.; set csg. 3,434 ft.; perf. csg. 3,370-3,400 ft.; pmpg. S.W.

Quarantine Bay—Plaquemines Parish

Gulf Ref. Co. No. 4 State, sec. 17-19s-17e. T.D. 5,700 ft.; 9⅝-in. csg. 5,560 ft. drlg. sh. 9,623 ft.; oil sd. 9,228-29 ft., 9,234-36 ft. and 9,617-18 ft.
Gulf Ref. Co. No. 5 State, sec. 17-19s-17e. Loc.
Gulf Ref. Co. No. 6 State, sec. 17-19s-17e. Driving piling.

Raceland—Lafourche Parish

Amerada Pet. Corp. No. 1 Godchaux Sugars, Inc., sec. 34-15s-19e. 18⅝-in. csg. 262 ft.; drlg. sh. 8,296 ft.
Amerada Pet. Corp. No. 2 South Coast Corp., sec. 35-15s-19e. 11¾-in. csg. 2,666 ft.; drlg. sh. 8,118 ft.

Sorrento—Ascension Parish

Pan American Prod. Co. No. 10 United Ld. Co., sec. 15-10s-4e. T.D. 901 ft.; top oil sd. 879 ft.; 7-in. csg. 876 ft.; I.P. 175 bbls. oil; 7/32-in. ck.
Sorrento Oil Co. No. 2 White, sec. 22-10s-4e. Drk.

South Roanoke—Jeff Davis Parish

Continental Oil Co. No. 1 Joe Sturdivant, sec. 36-10s-4w. Drlg. sh. 6,576 ft.
Union Sulphur Co. No. 2 T. R. S. Farms, sec. 23-10s-4w. T.D. 1,816 ft.; W.O.C.

South Elton—Jeff Davis Parish

Stanolind O. & G. Co.-Amerada Pet. Corp. No. 3-B Calcasieu Natl. Bank, sec. 2-7s-3w. T.D. 9,154 ft.; conditioning hol 9⅝-in. csg. 8,647 ft.; T.D. 13,210 ft.; D.S. stk.; P.B.; 7-in. csg. 9,230 ft.; P.B. 9,188 ft.; perf. csg. 9,140-55 ft.; no showing; P.B. 8,998 ft.; perf. csg. 8,990-98 ft.; flwg. 300 bbls. S.W.; ¾-in. ck.; W.P. 625 lbs.; trace of sd. and dist.; started making S.W.; killing to retest; sqzd. perf.; P.B.; T.D. 8,931 ft.

Starks—Calcasieu Parish

Lutcher-Moore Co. No. 5 fee, sec. 19-9s-12w. Drlg. sh. 3,003 ft.

Sulphur—Calcasieu Parish

Union Sulphur Co. No. 860 fee, 1,250 ft. W and 216 ft. N of C sec. 29-9s-10w. T.D. 5,737 ft.; P.B. and S.T.; drlg. sh. 5,096 ft.
Union Sulphur Co. No. 861 fee, sec. 29-9s-10w. T.D. 3,780 ft.; 7-in. csg. 3,775 ft.; failed to flow; pig. scrn. and lnr.
Union Sulphur Co. No. 863 fee, sec. 29-9s-10w. Drk.

Timbalier Bay—Lafourche Parish

Gulf Oil Corp. No. 4 State, sec. 36-23-21e. T.D. 1,373 ft.; twisted off drill collar; sdtrkd. jnk.; cd. sd. 5,332-36 ft.; tstd. 3 stands drlg. mud, oil and sd.; cd. oil sd. 5,336-43 ft.; drlg. sd. 5,862 ft.

Valentine—Lafourche Parish

Pan American Prod. Co. No. 2-B Community, sec. 58-17s-20e. Drlg. sd.&sh. 6,744 ft.
Pan American Prod. Co. No. 17 Harang, sec. 9-17s-20e. T.D. 7,496 ft.; abd.

Venice—Plaquemines Parish

Tide Water Oil Co. No. 5 Manhattan Fruit Co., sec. 26-26s-30e. Top oil sd. 7,250 ft.; T.D. 7,300 ft.; P.B. 4,800 ft. sdtrkd. at 4,813 ft.; cd. oil sd. 7,101-68 ft.; T.D. 7,290 ft.; 7-in. csg. 7,191 ft. perf. csg. 5,960-64 ft.; 10-min. D.S.T.; tstd. 120 ft. drlg. mud with oil odor; perf. csg. 5,964-68 ft.; recvd. 14 stnds. of oil, 3 stnds. of drlg. mud and sd.; making sqze. job; P.B. 3,650 ft.; sidetracked at 3,629 ft.; cg. sh. 5,981 ft.
Tide Water Oil Co. No. 7 Manhattan Ld. & Fruit Co., sec. 26-21s-30e. 10¾-in. csg. 2,462 ft.; cd. oil sd. 7,128-45 ft.; T.D. 7,205 ft.; 7-in. csg. 7,176 ft.

Villa Platte—Evangeline Parish

Amerada Pet. Corp. No. 1 A. Fournier, sec. 44-3s-2e. Drlg. sh. 6,940 ft.
Continental Oil Co. No. 1 Hattie Haas, sec. 44-3s-2e. Drlg. sh. 9,036 ft.
Continental Oil Co. No. 1 Martha Haas, sec. 44-3s-2e. T.D. 9,098 ft.; 6⅝-in. csg. 9,098 ft.
Continental Oil Co. No. 1 Ludeau, sec. 45-3s-2e. Drlg. sh.&L. 8,554 ft.
Continental Oil Co. No. 1 T. E. Vidrine, sec. 47-3s-2e. Drlg. sh. 10,157 ft.
Continental Oil Co. No. 1 J. E. Vidrine, sec. 46-3s-2e. Drlg. sh. 1,505 ft.

Welsh—Jeff Davis Parish

Humble O. & R. Co. No. 1-B T. S. Stegall, sec. 29-9s-5w. R.U.
A. V. Peters No. 3 fee, sec. 22-9s-5w. Drlg. sh. 142 ft.
Stanolind O. & G. Co. No. 2 Conover, sec. 20-9s-5w. T.D. 7,353 ft.; well tried to blow out; stk. D.S.

Woodlawn—Jeff Davis Parish

Union Sulphur Co. No. 3 Calcasieu Natl. Bnk., sec. 1-9s-6w. Drlg. rk. 7,013 ft.

S. LOUISIANA WILDCATS

Acadia Parish

H. E. Dalton No. 1 Setting, sec. 17-7s-1w. T.D. 5,106 ft.; P.B. to approx. 500 ft.; T.D. 3,925 ft.; D.S. stuck.
Humble O. & R. Co. No. 1 Finch, sec. 22-10s-1e. 9⅝-in. csg. 7,474 ft.; T.D. 10,222 ft.; P.B. 7,318 ft.; perf. csg. 7,308-15 ft.; flwd. 21 B.P.H. first day and started making 75% S.W.; sqzd. off perf.; perf. csg. 7,311-13 ft.; flwd. 17 B.O.P.H. for 9 hrs. and started flwg. 50% S.W.; killed; S.I.; W.O.

Avoyelles Parish

G. C. Koch et al No. 1 Kelone, sec. 21-2n-3e. 10¾-in. csg. 987 ft.; S.D. 6,021 ft.; prep. to resume drlg.

Beauregard Parish

Republic Prod. Co. No. 1 Lutcher-Moore Lbr. Co., sec. 10-13w-6s. 10¾-in. csg. 1,015 ft.; T.D. est. 8,290 ft.; perf. csg.; flwd. gas and dist.; S.I.

Calcasieu Parish

Sun Oil Co. No. 1 Lutcher-Moore Lbr. Co., sec. 1-8s-13w. Drlg. sh. 8,582 ft.
Wheeler Oil Corp. No. 2 Sch. Ld., sec. 16-9s-7w. 15½-in. csg. 46 ft.; S.D. 641 ft.

Cameron Parish

Humble O. & R. Co. No. 1 K. B. Hanzen, 466 ft. S and E, NW cor. SW¼ sec. 9-12s-6w. R.U.R.
Humble O. & R. Co. No. 1-B Miami Corp., sec. 7-14s-6w. 13⅜-in. csg. 2,150 ft.; drlg. sh. 10,351 ft.
Pure Oil Co. No. 1 Calcasieu Natl. Bnk., sec. 18-12s-4w. M.I.M.
Superior Oil Co. No. 1 Sells, sec. 5-15s-8w. T.D. 6,350 ft.; 10¾-in. csg. 6,350 ft.; drlg. sh. 8,802 ft.

Iberia Parish

Texas Co. No. 1 Bayless-Jones, sec. 58-12s-5e. T.D. 8,250 ft.; 9⅝-in. csg. 8,242 ft.; drlg. sh. 8,377 ft.
Texas Co. No. 2-B Vermilion Bay, sec. 20-16s-5e. T.D. 9,101 ft.; P.B. and sdtrkd. at 5,788 ft.; T.D. 7,020 ft.; P.B. 6,385 ft.; to sdtrk.; T.D. 7,623 ft.; P.B. 7,176 ft.; to sdtrk.; T.D. 7,348 ft.; 9⅝-in. csg. 7,263 ft.; T.D. 9,667 ft.; D.S. stk.

Jefferson Parish

Julius Szodomka No. 1 Carroll, sec. 12-12s-11e. T.D. 3,940 ft.; S.D.

Lafourche Parish

Sun Oil Co. No. 1 Dilbert Stark, Brown Cypress Co., sec. 70-15s-15e. Drk.

Orleans Parish

W. T. Burton No. 1 State-Lake Pontchartrain, Twp. 10s-13e. Driving piling.

Plaquemines Parish

Gulf Oil Corp. No. 1 Grand Prairie Lve. Dist., sec. 6-20s-19e. R.U.

Rapides Parish

J. J. Farrell No. 1 W. P. Aertker, sec. 16-4n-1e. Drk.

St. Bernard Parish

Gulf Ref. Co. No. 3 State Lake, Twp. 12s-15e. 13⅜-in. csg. 1,558 ft.; 9⅝-in. csg. 6,486 ft.; drlg. sh. 7,700 ft.

St. James Parish

Continental Oil Co. No. 1 Realty Operators, sec. 17-12s-17e. 18⅝-in. csg. 302 ft.; 13⅜-in. csg. 2,473 ft.; T.D. 6,501 ft.; run Schlumberger survey.

St. John the Baptist Parish

Shell Pet. Corp. No. 1 Godchaux, sec. 97-11s-7e. Loc.

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St. Landry Parish

Western Gulf Pet. Co. No. 1 St. Mary Ld. Co., sec. 7-8s-9e. Drlg. sh. 8,683 ft. No report.

St. Martin Parish

Shell Pet. Corp. No. 1 Jeanerette Lbr. Co., sec. 11-4s-2e. Drlg. sh. 7,345 ft.
Texas Co. No. 11 St. Martin Ld. Co., sec. 21-8s-7e. Drlg. sdy. sh. 4,852 ft.

St. Tammany Parish

Ozro B. Phillips No. 1 A. J. Planche, sec. 28-6s-10e. Drlg. sh. 1,691 ft.

Terrebonne Parish

Barnsdall Oil Co. No. 1 R. R. Barrow, Inc., sec. 41-17s-18e. Drlg.
Fohs Oil Co. No. 1 Buckley & Bourg. sec. 77-19s-17e. Stk. 7-in. csg. at 11,684 ft.; cg. 13,215 ft.
Fohs Oil Co. No. 1 State, sec. 41-19s-19e. 18⅝-in. csg. 246 ft.; cd. sd. S.G. 6,894-6,915 ft.; T.D. 9,232 ft.; 9⅝-in. csg. 9,226 ft.; drlg. sh. 12,260 ft.
Shell Pet. Corp. No. 1 Laterre, sec. 73-18s-18e. Dredge canal.
Shell Pet. Corp. No. 1 Realty Operators, sec. 10-18s-16e. Drlg. sh. 2,483 ft.
Texas Co. No. 1 State, Callau Island Bay, Twp. 23s-14e. Loc.

Vermilion Parish

Magnolia Pet. Co. No. 1 J. B. Ferguson, sec. 5-12s-2w. 13⅜-in. csg. 3,084 ft.; drlg. sd. 8,286 ft.

Vernon Parish

W. T. Burton No. 1 Gulf Lbr. Co., sec. 32-1n-6w. Loc.

TEXAS

Week Ending May 28

GULF COAST FIELDS

Lockridge—Brazoria County

Gulf Oil Corp. No. 5 Carrie Baker, J. W. Hall Sur. No. 11. Drlg. sd. 6,366 ft.
Humble O. & R. Co. No. 7 J. E. Alexander, H.T.&B. Sur. No. 28. Drlg.

Hastings Field—Brazoria County

E. M. Hailey No. 2 Blumer, H.T.&B. Sur No. 28. T.D. 6,111 ft.; S.D.; failed to flow.
Humble O. & R. Co. No. 6 B. H. Alexander, H.T.&B. Sur. No. 28. Drlg. sh. 3,160 ft.
Humble O. & R. Co. No. 2 Pat O'Day, H.T.&B. Sur. No. 28. R.U.
Humble O. & R. Co. No. 10 South Tex. Grain Co., Perry & Austin Sur. Drlg. sh. 4,181 ft.
Stanolind O. & G. Co. No. 10 Grote, A. C.H.&B. Sur. No. 2. Drlg. 1,500 ft.
Stanolind O. & G. Co. No. 28-C W. R. Curkett, H.T.&B. Sur. No. 35. Drlg.
Stanolind O. & G. Co. No. 19 Drake, H. T.&B. Sur. No. 36. Drlg. sh. 5,367 ft.
Stanolind O. & G. Co. No. 8 W. B. Wooster, A.C.H.&B. Sur. No. 1. Drlg. sh. 1,230 ft.

Old Ocean—Brazoria County

Harrison-Abercrombie No. 1 L. Augusburger, C. Breen Sur. 9⅝-in. csg. 7,011 ft.; T.D. 10,433 ft.; W.O.C.
Harrison-Abercrombie No. 1 David Kaufman, C. Breen Sur. Drlg. sh.&L. 9,930 ft.
Harrison & Abercrombie Oil Co. No. 1 Troyer and West Texas Abst. Co., C Breen Sur. T.D. 10,314 ft.; tstg.
Harrison & Abercrombie No. 1 I. N. Troyer, Chas. Breen Sur. 9⅝-in. csg. 7,010 ft.

Pledger—Brazoria County

Danciger O. & R. Co. No. 1 Leona H. Carter, Grey & Moore Sur. Drlg. sh. 1,560 ft.

West Columbia—Brazoria County

Adrian Moore No. 1 Gulf fee, Geo. Tennille Sur. T.D. 5,607 ft.
Frost and Dunnan No. 1 E. S. Parker, Geo. Tennille Sur. Cg. sh. 5,037 ft.
Merrick Oil Co. No. 2 T. L. Smith, G. Tennille Sur. Drlg.
Mike Hogg No. 2 Varner, W. Varner Lge. T.D. 5,901 ft.; P.B. 5,309 ft.
E. W. Ogden No. 1 S. W. Pipkin, G. Tennille Sur. Drlg. 932 ft.
Sterling O. & R. Co. No. 1 H. Perry, G. Tennille Sur. Drlg. 2,630 ft.
Sterling O. & R. Co. No. 2 Powers, G. Tennille Sur. Drlg. sh. 2,910 ft.
Texas Co. No. 21 Abrams, Geo. Tennille Sur. T.D. 5,433 ft.; P.B. to sdtrk.; T.D. 5,675 ft.; rmg.
Texas Co. No. 23 Abrams, G. Tennille Sur. Drlg. sd.&sh. 2,830 ft.
Texas Co. No. 5 Smith, G. Tennille Sur. Drlg. sh.&L. 4,020 ft.

Cedar Point Field—Chambers County

Humble O. & R. Co. No. 2 State, Tr. 95 T.D. 5,998 ft.; I.P. 26 B.P.H.; ¾-in. ck.
Humble O. & R. Co. No. 3-95 State, Galveston Bay, Loc.
Standard Oil Co. of Texas and Salt Dome Oil Co. No. 2 State, sec. 119, 16-in. csg. 286 ft.; 10¾-in. csg. 1,650 ft.; cg. csg. 286 ft.; 10¾-in. csg. 1,650 ft.; T. D. 6,120 ft.; perf. csg. 6,040-98 ft.; tstg flwd. S.W.; sqzd. off perf. to reperf. prep. to retest.

Seabreeze—Chambers County

Sun Oil Co. No. 2 Sea Breeze Land Co., sec. 102, H.T.&B. Sur. T.D. 8,854 ft.; 7-in. csg. 8,837 ft.; perf. csg. 8,810-24 ft.; swbg. wash wtr. and oil.

Greens Lake—Galveston County

Sun Oil Co. No. 2 Houston Farm Dev. Co., D. Buckley Sur. Drk.

Hitchcock—Galveston County

Maco Stewart No. 2 fee, J. Spillman Sur., 600 ft. due E of No. 3. Drlg. sh. 1,059 ft.

Clear Lake—Harris County

West Prod. Co. No. 1 Dobie fee, W. M. Dobie Sur. Loc.

Clinton—Harris County

Stanolind O. & G. Co. No. 1 Stalmark, Reels & Trobough Sur. Drk.
Stanolind O. & G. Co. No. 2 Edwards, Reels & Trobough Sur. Drk.
Stanolind O. & G. Co. No. 1 Paul Weaver, Reels & Trobough Sur. Loc.

Eureka—Harris County

Allamo Drlg. Co. et al No. 3 Laura Lackner, H. Reinerman Sur. 9⅝-in. csg. 2,508 ft.; top oil sd. 7,692-7,730 ft.; T.D. 7,745 ft.; run 5½-in. csg.
Jack Frazier No. 3 Varner Realty Co., J. Reinerman Sur. R.U.
J. Frazier, No. 2 Vollmer & Neiman, J Reinerman Sur. Perf. csg. 7,717-32 ft.; I.P. 594 B.P.D.; ¼-in. ck.
Houston Oil Co. No. 2 Helberg-Lackner, J. Reinerman Sur. Top oil sd. 7,691 ft.; T.D. 7,753 ft.; oil sd. 7,691-7,717 ft.; 5½-in. ck.; tstg.
Houston Oil Co. No. 3 Helberg & Lackner, J. Reinerman Sur. Drk.
Tide Water Associated Oil Co. No. 1 Laura Lackner, J. Reinerman Sur. R.U.

Fairbanks—Harris County

Amerada-Stanolind O. & G. Co. No. 1 W. E. Denman, J. Waugh Sur. Drlg. sh. 5,439 ft.
Amerada-Stanolind O. & G. Co. No. 1 F. W. Farnsworth, J. Clarkson Sur. Drk.
Amerada-Stanolind O. & G. Co. No. 1 Nigteland Inv. Co., J. M. Dement Sur. Drk.
Amerada-Stanolind O. & G. Co. No. 2 Mary Foley, J. Clarkson Sur. R.U.
Amerada-Stanolind O. & G. Co. No. 2 E. W. Mills, A. Lawson Sur. Drk.
Amerada Pet. Corp.-Stanolind O. & G. Co. No. 1 C. W. Hahl, W. K. Hamblin Sur. Drlg. sh. 5,697 ft.
Amerada-Stanolind O. & G. Co. No. 1 A. Sebek, W. K. Hamblen Sur. R.U.
Amerada-Stanolind O. & G. Co. No. 1 J. F. Sebek, G. Williams Sur. Drk.
Amerada-Stanolind O. & G. Co. No. 1 E. W. Thompson, J. Clarkson Sur. Drlg. sh. 1,530 ft.
Carroll Oil Co. No. 1 Ralph Johnston, J. N. Dement Sur. T.D. 6,864 ft.; perf. csg. 6,839-43 ft.; would not flow; S.D.
Gem Oil Co. No. 4 B. W. Reid, G. Ayers Sur. Drk.
Housh-Thompson & Schofield No. 1 Williams Sur. Drk.
Housh-Thompson & Schofield No. 1 Windorf, G. Williams Sur. Drlg. sh. 3,220 ft.
Showers and Moncrief No. 1 G. W. Reid, J. Waugh Sur. Drlg. sh. 6,296 ft.
E. L. Smith and Ownby Drlg. Co. No. 1 Gibson, Geo. Ayers Sur. Loc.
Union Prod. Co. No. 1 Goodykoontz, W. S. Powell Sur. Drlg. sdy. sh. 5,967 ft.
H. E. Williams and Thomoson No. 1 M. Sterns, G. Williams Sur. Drlg. 1,210 ft.
Windsor Oil Co. No. 1 Ley, J. Waugh Sur. Drlg. sh. 2,987 ft.

Friendswood—Harris County

Humble O. & R. Co. No. 8 Beamer, T. Choate Sur. Drlg. sh. 5,495 ft.
Humble O. & R. Co. No. 9 Beamer, T. Choate Sur. Drk.
Humble O. & R. Co. No. 2 G. R. Cottingham, T. Choate Sur. Drlg. sh. 3,930 ft.
Humble O. & R. Co. No. 3-B Goodwin, W. K. Smith Sur. Drlg. sh. 4,510 ft.
Humble O. & R. Co. No. 2 Herman Hospital, T. Choate Sur. T.D. 5,820 ft; tstg.
Humble O. & R. Co. No. 3 Herman Hospital, T. Choate Sur. Drk.
Humble O. & R. Co. No. 1 J. L. Jones, Perry & Austin Sur. Drk.
Humble O. & R. Co. No. 1x 2-A Port City ice Co., T. Choate Sur. Drk.
Humble O. & R. Co. No. 3 J. H. Ross, Perry & Austin Sur. Drlg. sh. 3,239 ft.
Humble O. & R. Co. No. 1 E. E. Watson. Drk.

Cordele—Jackson County

H. J. Porter No. 1 Kern-Ackley, A. Baker Sur. R.U.
H. J. Porter No. 1 Ed Monia Pressley, Peter White Sur. 10¾-in. csg. 171 ft.
H. J. Porter No. 1 Woussi, Peter White Sur. Loc.

Clam Lake—Jefferson County

Shell Pet. Corp. No. 2 McFaddin, S. A. Pace Sur. Cd. oil sd. 5,553 ft.; drlg. sh. 7,287 ft.

North Cheek—Jefferson County

Magnolia Pet. Co. No. 4 J. H. Phelan, A. Stivers Sur. 18⅝-in. csg. 135 ft.; drlg. sh. 8,715 ft.

Hardin—Liberty County

Ark. Fuel Oil Co. No. 2 W. J. Green, A. B. Hardin Sur. R.U.
Atlantic Ref. Co. No. 1-B McMurtry, A. B. Hardin Sur. T.D. 7,860 ft.; 7-in. csg. 7,855 ft.
Atlantic Ref. Co. No. 2 W. McMurtry, H. B. Johnson Sur. T.D. 7,871 ft.; 7-in. csg. on bttm.; perf. csg. 7,828-31½ ft.; jetting with gas.
Atlantic Ref. Co. No. 1 Richardson, A. B. Hardin Sur. Drlg. sh.&shlls. 7,115 ft.
Fohs Oil Co. No. 2 Johnson-Finley, H. B. Johnston Sur. 9⅝-in. csg. 178 ft.; T.D. 7,647 ft.; perf. csg. 7,590-7,600 ft.
Gulf Oil Corp. No. 3-A J. C. Barfield, H. B. Johnston Sur. Drlg. sh.&L. 7,512 ft.
Gulf Oil Corp. No. 3 J. H. Cessna, H. B. Johnston Sur. Loc.
Sun Oil Co. No. 2 Hisey, H. B. Johnston Sur. T.D. 7,708 ft.; 5¾-in. csg. 7,660 ft.; swbd. S.W.; perf. csg. 7,608-25 ft.; I.P. 157 bbls. oil, 12 hrs.; ¼-in. ck.
Woodley Pet. Co. No. 1 W. S. Partlow, H. B. Johnston Sur. Drlg. sh. 6,469 ft.
Woodley Pet. Co. No. 1 West et al, H. B. Johnston Sur. Drlg. sh. 7,437 ft.

Bay City—Matagorda County

Hamman Expln. Co. No. 2 Crooke, E. Hall Sur. Top sd. 9,660 ft.; tstg.; no report.
Hamman Expln. Co. No. 2 G. M. Sloan, J. T. Belknap Sur. Drk.

McCrosky—Matagorda County

Pierce Est. No. 3-A Pierce Est., D. Fenton Sur. Drlg. sh. 5,237 ft.

Palacios—Matagorda County

Bennett Prod. Co. No. 1 Foley Ld. Co. L. Goodwin Sur. Drlg. sdy. sh. 8,085 ft.
Sun Oil Co. No. 1 F. K. Robeson, L. Goodwin Sur. Drk.

Orange—Orange County

W. V. Bowles No. 1 J. H. Scales, Wm. Dyson Sur. T.D. 6,211 ft.; recvd. 14 thribbles of oil 6,120-42 ft.
C. L. Brown No. 1 Chesson, Wm. Dyson Sur. Drlg. sh. 2,430 ft.
Ryan & Thompson No. 1 Walter-McGill Wm. Dyson Sur. T.D. 6,123 ft.; rmg csg.; top oil sd. 6,112 ft.; 7-in. csg. 6,111 ft.; flwd. P.L.O. for 6 hrs.; went dead; swbd. S.W.; made sqze. job drld. out 6,114 ft.; flwg. oil and S.W.; tstg.

Segno—Polk County

Gulf Oil Corp. No. 2 Ragan, I.&G.N. Sur 15. 9⅝-in. csg. 5,587 ft.; 20-min. D.S.T. 8,146-61 ft.; tstd. 2,400 ft. P.L.O.: 140 lbs. pres.; T.D. 9,154 ft.; perf. csg. 8,163-68 ft.; I.P. 623 B.P.D.; ¾-in. ck.

Spurger—Tyler County

Republic Prod. Co.-Houston Oil Co. No 9, Hurd, N. Hurd Sur. T.D. 7,700 ft.; 7-in. csg. 7,660 ft.; tstg.
Republic Prod. Co. No. 10 Hurd, N. Hurd Sur. R.U.

GULF COAST WILDCATS

Brazoria County

Texas Co. No. 5 Freeport Sulphur Co., H. Burt Sur. Cg. L. 1,296 ft.

Brazos County

Pet. Heat & Power Co. No. 1 Minnie C. Dunn, J. M. Barrera Sur. S.D. 5,040 ft. abd.

Burleson County

Red Bank Oil Co. No. 1 Coffield, E. Sante Sur. T.D. 6,173 ft.; reset tbg.; swbg. wash wtr.

Calhoun County

Adams & Lyles et al No. 1 Forster, Lemuel Walker Sur. Drlg. sh. 5,720 ft.

Chambers County

Geo. Anderson No. 1 Julia Casey, W. D. Smith Sur. Loc.

Fort Bend County

Strake Pet. Corp. No. 1 G. L. Dew, D. Bright Sur. Drlg. sh. 5,780 ft.
Strake Pet. Co. No. 2 Sugarland Industries, Wm. Stafford Sur. Drlg. sh. 5,096 ft.

Galveston County

Sun Oil Co. No. 1 Atkins, Burrell Franks Sur. Drlg. sd.&sh. 6,524 ft.
Sun Oil Co. No. 1 Cade, A. Dickinson. 13⅜-in. csg. 2,218 ft.; T.D. 8,090 ft.; cutting out D.S.

Harris County

J. Frazier-C. B. Bunte et al No. 1 Houston Deep Water Ld. Co., Thos. Earle Sur. Drlg. sh. 2,268 ft.
Merit Oil Co. No. 1 Guy Smith, F. Rankin Sur. 10¾-in. csg. 1,266 ft.; cg. sh. 4,003 ft.

Jasper County

John Mayo No. 1 Cartwright, Legrande Sur. Drk.

Jackson County

Humble O. & R. Co. No. 1 J. R. Davis, I.&G.N. Sur. No. 20, Blk. 150. Drlg. sh. 2,575 ft.
Magnolia Pet. Co. No. 1 West Ranch, Ramon Musquez Sur. Drlg. sdy. sh. 5,776 ft.

Jefferson County

I. E. Harwell No. 1 State, Gulf of Mexico. T.D. 5,840 ft.; D.S. stk.; pulled in two; S.D.; may abd.

Liberty County

John Mayo-Chapman Minerals No. 1 J. Blanding, J. Eldridge Sur. Cg. sh. 5,860 ft.

Matagorda County

J. K. Dorrance No. 1 M. Adamcik, I.&G N. Sur. No. 1. T.D. 7,512 ft.; P.B. 3,500 ft.; sdtrkd.; drlg. sh. 7,824 ft.
Rutherford Drlg. Co. No. 1 J. A. Birkner-Williams, Low, Thayton and Barter Sur. T.D. 8,400 ft.; abd.
Sun Oil Co. No. 1 Fred Robbins, C. H Vandeveer Sur. T.D. 10,160 ft.; well tried to blow out; 7-in. csg. 10,150 ft. perf. csg. 9,970-10,030 ft.; flwg. bv hds.; went dead; reperf. csg. 9,430-9,520 ft.; made sqz. job.

Montgomery County

J. Smith et al No. 1 J. V. Scott, F. A. B. Wheeler Sur. R.U.

Orange County

Texas Co. No. 1 H. J. Lutcher-Stark, Stephen Jett Sur. Drlg. sd.&sh. 8,008 ft.

Polk County

C. E. Gates No. 2 I. O. Jackson, J. W. Abbey Sur. Drk.

San Jacinto County

J. W. Oliphant No. 1 Gibbs, Chas. Memin Sur. T.D. 6,000 ft.; abd.

Trinity County

Boone Bros.-Jordan Drlg. Co. No. 1 Crauch, Joel Clapp Sur. Spd.; no report.

Tyler County

Glenn H. McCarthy No. 1 J. A. McShane, B.B.B.&C. Sur. No. 13. Drlg. sdy. sh. 7,010 ft.

Waller County

David MacDaniel No. 1 O. M. Dinkins, L. Pearsall Sur. Drlg. sh. 3,138 ft.
Stanolind O. & G. Co. No. 1 Freeman, H.T.&C. Sur. No. 99. Run 9⅝-in. csg; drlg. sh. 8,864 ft.

S. W. TEXAS WILDCATS

Atascosa County

Altgell Mason No. 1 Vanegar, Francisco De La Garza Sur. R.U.
G. D. Curly and R. E. Phalon No. 1 Henritta Kresch, J. C. Dierks Sur. S.D. 20 ft.

Bastrop County

R. C. Franklin No. 2 Yarrington, Jose Manuel Bangs Sur. Drlg. 210 ft.; no report.
Humble O. & R. Co. No. 1 Hellsman, J. Cunningham Sur. T.A.C. 5,631 ft.; cg. Edw. L. 6,719 ft.
Ralph Ogden No. 1 Storey, Henry Warnell Sur. S.D. 620 ft.
Western Gulf Pet. Corp. No. 1 T. M. Moon, Jacob L. Standifer Sur. No. 15. Drlg. sh. 2,337 ft.

Bexar County

Nami Herman No. 1 W. F. Fields, A. Bustillos Sur. T.D. 514 ft.; tstg. 660-75 ft.
Luling O. & G. Co. No. 1 Russell, Fernando Rodriquez Sur. T.D. 1,480 ft.; Edw. L.; P.B. 1,180 ft.; I.P. 35 bbls. oil, 115 bbls. wtr. per day; pmpg.

Caldwell County

Banke Miller Oil Co. No. 1 Martindale, Hector McNeil Sur. S.D. 2,850 ft.
Jan Oil Co. No. 1 Chew, J. McCoy Sur. T.D. 2,022 ft.; 5½-in. csg. 1,930 ft.; tstg.; no report.
Mencill Pet. Co. No. 1 J. Wallinger, Gedeon Pace Sur. S.D. 536 ft.
C. R. Richardson No. 1 Schowe, T. Maxwell Sur., Abst. 188. S.D. 850 ft.
F. W. Shield No. 1 O'Bannion, Pablo Martinez Sur. No. 9. R.U.

Cameron County

Saxet Prod. Co. No. 1 Port Isabel Irrig Co. Sur. 30. Drk.
E. B. Whittington No. 1 Gilmer, H. C. Williams Sur. No. 62. R.U.

De Witt County

Mayo Oil Co. No. 1 W. D. McCurdy, John Hunt Sur. R.U.

Dimmitt County

Texas & Maryland Corp. No. 1 McKnight, Blk. 13, sec. 23, Base of Austin Chalk 5,201 ft.; top Georgetown L. 6,120 ft.: 5½-in. csg. 7,094 ft.; T.D. 7,141 ft.; P.B. 2,850 ft.; swbd. S.W.; shot with nitroglycerin 2,451-56 ft.; blew out; killed; found csg. parted 900 ft. from top; fsg.; P.B. 1,900 ft.; redrld. to 2,465 ft.; cd. sd. 2,447-65 ft.; 5½-in. csg 2,447 ft.; swbd. in flwg. wash wtr. and gas; tstg.

Duval County

Henry Brown No. 1 Guy Est., M. E. Gussett Sur. S.D. 3,321 ft.
Verne Clopton No. 1 Denn, H. K. Allison Sur. Drlg. sh. 250 ft.
N. V. Duncan No. 1 Neeley, R. F. Neeley Sur. No. 284. Drlg. sh. 120 ft.
Frank Gravis No. 1 Megargal, J. Boyles Sur. 10-in. csg. 500 ft.; S.D.
Magnolia Pet. Co. No. 1 Duval Co. Rnh. Co., G.C.&S.F. Sur. No. 291. T.D. 1,190 ft., sd.; 20-min. D.S.T. 1,185-90 ft. recvd. 110 ft. of oil.
Magnolia Pet. Co. No. 1 Gray, E. N. Gray Sur. Cg. sh. 3,610 ft.
Magnolia Pet. Co. No. 1 Weill Est., Sur. 496. T.D. 2,074 ft.; tstg.

H. J. Porter No. 1 Fitzsimmons, J. Poltevent Sur., sec. 291. Tstd. 450 ft. P.L. O.; 90 lbs. pres. on D.S.T. 4,265-4,305 ft.; T.D. 4,303 ft.; 7-in. csg. 4,292 ft.; flwd. 108 bbls. 24 hrs.; 5/32-in. ck.; T.P. 360 lbs.

Rowan & Hope No. 1 Cuellar, B.B.B.& C. Sur., sec. 96. 10¾-in. csg. 198 ft.; made 15-min. D.S.T. 5,100-36 ft.; tstd. 49 lbs. press.; 500 ft. oil and 120 ft. S.W.; cg. ahead.

Standard Oil Co. of Texas No. 1, Dolores Garcia Sur. R.U.

Edwards County

Evans & Love No. 1 Steve Brown, Blk. 6, G.W.T.&P. Sur. S.D. 6,261 ft.

Frio County

F. L. Thompson No. 1 Davis, G.B.&C.N. G. Sur. No. 1. Cd. oil sd. 3,722-59 ft.; S.D. 4,171 ft.

Goliad County

Bunte Prod. Co. No. 1 Crews, Maria Jesusa DeLeon Sur. R.U.

Gonzales County

Heard-Hall & Young No. 1 Clark, Robt. S. Armistead Sur. Drlg. 43 ft.; no report.

Guadalupe County

Benstrasser No. 1 Eickenroht, A. Marra Esnaurrezar Sur. R.U.

Hidalgo County

Hidalgo Prod. Co. No. 1 Daskam Corp., Porc. 45, Blk. 34. Drlg. sh. 3,837 ft. No report.

Jim Hogg County

Humble O. & R. Co. No. 1 Anna Kelsy Bass, San Rafel Gr. 10¾-in. csg. 1,207 ft.; cg. sdy. sh. 5,308 ft.

Jim Wells County

E. Calloway et al No. 1 E. O. Cook, Lavaca Grant Sur. S.D. 4,390 ft.

W. J. Coates No. 1 Lindsay & Reed, Lavaca Gr. T.D. 5,315 ft.; perf. csg. 5,248-58 ft.; tstg.; no ga.

Conroe Drlg. Co. et al No. 1 Lindsay & Reed, Lavaca Sur. Cd. oil and gas sds. 5,241-58 ft.; tstg.

Walter Goldston No. 1 Lindsay & Reed, LaVaca Gr. Run csg. to test 5,100 ft. Perf. csg. 5,155-60 ft.; flwg. wet gas; no ga.

H. H. Howell et al No. 2 Lindsey, Lavaca Gr. T.D. 5,446 ft.; run Schlumberger.

H. H. Howell No. 3 Lindsay et al, Lavaca Gr. Sur. Perf. csg. 5,288-5,312 ft.; comp.; no ga.

Humble O. & R. Co. No. 1 Tarrant, J. Poitevent Sur. Cg. sh. 4,669 ft.

Magnolia Pet. Co. No. 1 Valades Hrs., La Anima Sola Gr. Drlg. sh. 3,315 ft.

Southern Minerals Oil Corp. No. 1 J. R. Trussells, Lavaca Gr. 10¾-in. csg. 540 ft.; drlg. sh. 4,610 ft.

Kerr County

Edminston No. 1 Saul, Sur. 47. S.D. 55 ft.

Kleberg County

Pure Oil Co. et al No. 1 State Ld., Tr. 68, Laguna Madre Bay, Lse. No. 528 18⅝-in. csg. 198 ft.

La Salle County

Finley S. Ewing No. 1 Pugh, E. L. Garrett Sur. S.D. 780 ft.

Eugene Garner No. 1 Yeager, Lot 6, Wallace Subd. of Sur. No. 39. Drlg. sh. 883 ft.

Lee County

Eleoussa Oil Co. No. 1 Sanders, J. Vin Roeder Sur. T.D. 4,398 ft.; prep. to resume drlg.

Live Oak County

R. H. Feltner No. 1 Reed, I.&G.N. R.R. Sur. 15. R.U.

Gilcrease Oil Co. No. 1 Brannan, B.S.& F. Sur. S.D. 2,300 ft.

Holland Oil Co. No. 1 West Est., C. Q. Ragland Sur. 10¾-in. csg. 189 ft.

J. I. Newton No. 2 Geo. West, James Wright Sur. 10-in. csg. 189 ft.; T.D. 2,262 ft.; abd.

V. G. Schimmel et al No. 1 Geo. West, G. L. Haas Sur. T.D. 210 ft.

McMullen County

N. V. Duncan No. 1 Nueces Ld. & Livestock Co., B.S.&F. Sur. No. 119. Drk.

R. C. Lipscomb No. 1 Shiner, sec. 54, Shiner ranch. Cd. oil sd. 1,365-70 ft.; tstg. 1,752 ft.; swbd. some oil; S.D.

S. M. Nesser No. 1 Franklin, J. Poitevent Sur. No. 33. Loc.

G. G. Newton No. 1 Bryne, Geo. Pettuck Sur. S.D. 670 ft.

Reynolds & Richardson No. 3 Shiner, Shumway Subd. of Shiner rnch. Drlg. sh. 1,828 ft.

Medina County

F. A. Brown No. 1 Senne, A.C.H.&B. Sur. 105. Logged 8 ft. of sat. oil sd. 802-11 ft.; (corrected); 7-in. csg. 802 ft.; tstg.; T.D. 874 ft.; run inr.

J. W. Cromwell No. 1 J. W. Tondre, I. J. Rogers Sur. Run csg.; T.D. 940 ft.

D. K. J. Oil Co. No. 1 Burrell. T.D. 2,039 ft.; S.D. after swbg. dry.

S. F. Ewing No. 2 Riff, J. Haby Sur. No. 42. Drlg. plug to test.

Gee Hayes et al No. 1 Conrad, J. Keppler Sur. T.D. 485 ft.; run csg.

Owens and Dean No. 1 Ben Haby, Albert Kempf Sur. No. 37. T.D. 771 ft.; 7-in. csg. 637 ft.; T.A.

Taylor & Pepper No. 1 Saathoff, Peter Eichorn Sur. S.D. 260 ft.

J. R. Trentman et al No. 1 Carle Merc. Co., V. A. Johnson Sur. T.D. 1,905 ft.; 7-in. csg. 1,835 ft.; csg. split; prep. to sqze. split with cmt.; S.D.

M. L. Walker No. 1 Zuberbulen, A. Bonamy Sur. R.U.; S.D.

Milam County

Clark & Morgan No. 1 Johnson, Juan Jose Acosta Sur. S.D. 800 ft.

Texedo Oil Co. No. 1 Graham, Charles Cornea Sur. Logged S.O. 1,135-36 ft.; cg. Edw. L. 1,809 ft.

Texedo Oil Co. No. 1 Paul Garves, C. Robertson Sur. S.D. 1,170 ft.; C.O.; set 7-in. csg. 1,167 ft.

Nueces County

Coast Line Oil Co. No. 1 State (Redfish Bay), State Tr. No. 32. Logged 7,338-56 ft.; drlg. sd. 8,259 ft.

J. W. Coener No. 1 LaPrelle, Robert White Subd. of Hoffman Petronellia rnch. 10-in. csg. 1,010 ft.; cg. sh. 5,-101 ft.

Mills Bennett Prod. Co. No. 1 Fred Talley, sec. 10, Geo. Paul Subd. 10-in. csg. 759 ft.; T.D. 7,035 ft.; abd.

Refugio County

I. J. Allen et al No. 1 Rooke, Jose Miquel Aldrite & Jose Maria Aldrite 4½ Lge. Drlg. sh. 2,160 ft.

San Patricio County

Atlantic Ref. Co. No. 1 Jones, sec. 72, G. H. Paul Subd. of Coleman-Fulton Pasture Lds. Drlg. sh. 3,610 ft.

A. L. Bob No. 2 Green, T. T. Williamson Sur. S.D. 7,100 ft.

J. K. Culton No. 1 White Point Dev. Co., J. H. Sequin Sur. No. 4. T.D. 4,-966 ft.; 7-in. csg. on bttm.; perf. csg. 4,925-35 ft.; I.P. 50 B.P.D.; ⅛-in. ck.

Humble O. & R. Co. No. 1 T. J. Carmody, sec. 22, Third Addn. of Taft farm lands. Drk.

Starr County

O. C. Borah No. 1 P. G. Garcia, Juan Salinas Sur. Drlg. sh. 700 ft.

O. C. Borah No. 2 Martinez, J. Salinas Sur. S.D. 370 ft.

O. C. Borah No. 7 Martinez, Joaquin Salinas Sur. S.D. 455 ft.

Lee Davis et al No. 1 Garza, Jose Salvador De La Garza, Porc. 88. Drlg. sh. 1,500 ft.

G. E. Dodd No. 1 Wardner, Porc. 84. T.D. 2,164 ft.; 4-in. csg. 2,146 ft.; swbd. dry; S.D.; abd.

G. E. Dodd No. 1-A Wood, V. Vela Sur. No. 84. S.D. 1,540 ft.

Sioux Oil Co. No. 7 Ricaby, Porc. 83. T.D. 1,403 ft.; 7-in. csg. 1,393 ft.

Sun Oil Co. No. 1 Smith, A. J. Smith Sur. Loc.

Sun Oil Co. No. 1 Young, J. Sisneros Sur. No. 79. T.D. 2,814 ft.; S.W. sd.; rmg.

Wheelock & Collins No. 1-A Guerra, Santa Cruz Gr. Drlg. 500 ft.

W. W. Zimmerman et al No. 1 Starr Co. Cattle Co., Juan De La Garza, Porc. 89. Loc.

Travis County

R. F. C. Oil Co. No. 1 Jones, Reuben Hornsby Sur. No. 17. Drlg. 150 ft.; no report.

I. Ripp No. 1 Thaxton, Santiago De Valle Gr. S.D. 450 ft.

Texas Empire Trading Co. No. 1 E. E. Jourdan, Santigo Del Valle Gr. T.D. 709 ft.; 5½-in. csg. 611 ft.

Victoria County

W. V. Bowles No. 2 Robertson, T. C. Burnham Sur. Loc.

Webb County

C. C. Bonner No. 1 Lewis, W. P. Rutledge Sur. 460. Cg. sh. 2,034 ft.; no report.

Garrison & Paris No. 1 Benavides, Hale Subd. of M. Arispe Gr., C Blk. 107. Drk.

O. W. Killam No. 1 Cuellar, Josefa Cuella Sur. R.U.

Willacy County

Continental Oil Co. No. 2 Garcia Ld. Co., Blk. 118. Drlg. sh. 9,473 ft.

Williamson County

Marion Aldridge No. 1 Kroschewsky. 7-in. csg. 969 ft.; T.D. 1,084 ft. (corrected); acdzd.; swbg. brksh. wtr.

Wilson County

Stapper Oil Co. No. 1 J. McDaniel, L. Manchoca Sur. S.D. 933 ft.

Zapata County

R. B. Bryant No. 1 Flores, La. Huerta Sur. T.D. 1,556 ft.; stk. D.P.; jnkd. hole; skd. drk. 45 ft. north; drlg. sh. 3,113 ft.; no report.

EAST TEXAS

(Border counties)

Rodessa—Cass County

R. W. Norton No. 6 Moore, Meyers Sur. Comp. 3 B.P.H.; ¼-in. ck.; T.P. 950 lbs.; C.P. 1,250 lbs.; 7-in. csg. 6,034 ft.; perf. 3,943-48 ft; 29 shots; T.D. 6,046 ft.

Red Iron Drlg. Co. No. 1 Echols, Myers Sur. Drk.

Union Prod. Co. No. 2 Carter et al, Bryant Sur. Set 7-in. csg. 6,036 ft.; T.D. 6,110 ft.; comp., 224 bbls. in 14 hrs.; T.P. 260 lbs.; C.P. 750 lbs.

Bowie County

King Oil Corp. No. 1 Watts, Geo. Brinlee Sur. S.D. 4,574 ft.

Harrison County

Ark.-La. Gas Co. No. 1 C. M. Abney, E. Little Sur. Set 7-in. csg. 2,350 ft.; set csg. 4,836 ft.; perf. 4,805-15 ft.; showed est. 30,000,000 ft. gas, spray S.W.; P.B. whipstocked; comp.; est. 18,000,000 ft. gas.; 4,834 ft.

Marion County—Rodessa

Ark-La. Gas Co. No. 1 Belcher, Coy Sur. R.U.

Ark.-La. Gas Co. No. 3 Holland, Hanks Sur. Drlg. anhy. and sh. 5,694 ft.

Gulf Oil Corp. No. 1 Smith, Hanks Sur. Set 5-in. csg. 6,068 ft.; T.D. 6,068 ft.

Holcomb & Thomason No. 1 Bramlett, 245 ft. S line, 20-ac. lse., 400 ft. E line, Gentry Sur. Set 10¾ n. csg. at 1,006 ft.

Holcomb & Thomason No. 2-B Henderson, Ewing Sur. Set 5½-in. at 6,000 ft.; T.D. 6,030 ft.

Hollandsworth Drlg. Co. No. 1 Brantley, Bennington Sur. Set 5-in. csg. 5,986 ft.; W.O. R.R. com. gauge.

Hollandsworth Drlg. Co. No. 1 Hurst, Hanks Sur. Set 9⅝-in. csg. 1,941 ft.

Illinois Pet. Co. No. 1 Hale, Hanks Sur. Drlg. L. 5,184 ft.

Ohio Oil Co. No. 2 Moseley, Francis Sur. Rng. csg.; T.D. 6,117 ft.; T. Gloyd 6,096 ft.

Phillips Pet. Co. No. 1 Beard, Bennington Sur. Set 7-in. csg. 6,088 ft.; T.D. 6,100 ft.; perf. 6,019-26 ft.; swbg. small S.O.; drld. out plug at 6,075 ft.; acid. with 2,000 gals.; tstd. 2 B.P.H. with much gas.; perf. 5,982-93 ft. and 6,000-6,008 ft.; swbg.; T.D. 6,075 ft.

Shell Pet. Corp. No. 1-C Henderson, Bennington Sur. Set 8⅝-in. csg. 1,009 ft.

Shell Pet. Corp. No. 2-B Henderson, Bennington Sur. Set 5-in. csg. 6,016 ft.; T.D. 6,020 ft.

Shell Pet. Corp. No. 2 Schulter, Smith Sur. Drlg. sh. and anhy. 4,685 ft.

Shell Pet. Corp. No. 3 Schulter, S. Smith Sur. Drlg. L. 4,685 ft.

Union Prod. Co. No. 8 Hutchinson, Coy Sur. Set 7-in. csg. 6,144 ft.; T.D. 6,151 ft.

Panola County

Texas Co. No. 1 Claude Adams, T. Cox Sur. Set 9⅝-in. csg.; drlg. 7,663 ft.

Sabine County

Pet. Heat & Power Co. No. 1 Jasper State Bnk., McDonald Sur. Spdg.

Shelby County

Center Oil Co. No. 1 Windham, A. H. English Sur. Cg. 3,406 ft.

Mallard & Locke No. 1 W. E. Roller Est., Sullins Sur. Drlg. 2,290 ft.

WEST TEXAS WILDCATS

Andrews County

Atlantic Rfg. Co. No. 1 Texas Univ., sec. 26, Blk. 11, University Lands. S.D.R. 3,283 ft.

H. S. Forgeron No. 1 Lockhart-Brown. W.O. 7-in. 4,307 ft.

Perkins, Wright & McMillan No. 1 Cowden. W.O.C. 8,004 ft.

Rhodes & Tompkins No. 1 Emma Cowden, sec. 1, Blk. 44, T.&P. Sur. Drlg. 2,820 ft.

Rogers & Rogers No. 1 O. B. Holt, P.S.L. Sur. Tstg. 4,511 ft.; last report.

Seaboard Oil Corp. No. 1 Munger-Nix sec. 1, Blk. A-4, P.S.L. Sur. S.D.O. 4,526 ft.

Seaboard Oil Corp. No. 1 Thornberry, sec. 8, Blk. 42-A, P.S.L. Sur. Last report.

A. C. Wheeler No. 1 T. M. Gardner, sec 15, Blk. A-35, P.S.L. Sur. P.B. 4,615 ft.; W.O.C.

Bailey County

Duffey & Etz No. 1 Enochs, Tract 66, League 182, Floyd Co. School Lands Sur. W.O.C. 4,166 ft.

Brewster County

H. D. Wilcox No. 1 Kokernot, sec. 12, Blk. C, J. V. Massey Sur. S.D.O. 1,871 ft.

Cochran County

Devonian-Honolulu-Cascade No. 1-C-8 Duggan, sec. 8, Oldham C.S.L. Sur. Drlg. 4,065 ft.

Helmerich & Payne No. 1 Westheimer & Daube, Lab. 14, Leg. 147. Drlg. 5,010 ft.

Honolulu Oil Co. No. 1-91 C. S. Dean, League 91, Lipscomb C.S.L. Sur. Prep. D.D. by cable tools 4,850 ft.

Texas Co. No. 1 Mallett Ld. & Cattle Co., sec. 7, Blk. G, P.S.L. Sur. P.B. 5,060 ft.; tstg.

Coke County

H. E. Ogden No. 1 Rawlins, sec. 390, Blk. 1-A. S.D. 3,465 ft.

Barnett Pet. Co. No. 1 J. R. Mims, sec. 39 Blk. W, T.&P. Sur. S.D. 1,861 ft.

Crane County

Gulf Oil Corp. No. 4 McKnight, sec. 3, Blk. B-21, P.S.L. Sur. Drlg. 2,504 ft.

Magnolia Pet. Co. No. 1 University, sec. 16, Blk. 30, University land, 3½ mi. NW of Church-Fields pool. Comp. 52 B.O.P.D.

Crockett County

H. W. Black & Eubank Oil No. 1 University, sec. 13, Blk. 14, University Sur. P.B. 1,420 ft.; prep. shoot.

Choate & Hogan No. 1-H University, Univ. Sur., sec. 14, Blk. 14. Drlg. 1,130 ft.

Choate & Hogan No. 1-J University, sec. 15, Blk. 14, University Sur. P.B. 1,450 ft.; R.U.P.

Short & Gillette No. 1 J. W. Owens, Jose Zunegas Sur. Drlg. 440 ft.

Culberson County

Harry J. W. Nichaus No. 1 C. M. Caldwell, sec. 15, Blk. 109, P.S.L. Sur. Drlg. 2,072 ft.

S. J. Isaacs No. 1 L. G. Sheddan, sec. 25, Blk. 52, P.S.L. Sur. Spd. and S.D.

Quito Oil Co. No. 1 Cameron Lbr. Co., sec. 24, Blk. 81, P.S.L. Sur. Drlg. 240 ft.

Dickens County

J. F. Marrisey No. 1 I. J. McMahan, sec. 319, Blk. 1, H.&G.N. Sur. S.D. 1,050 ft.

Ector County

Stogner et al No. 1 Hendrick, sec. 4, Blk. 43, T.&P. Sur. S.D. for csg. 3,444 ft.

El Paso County

Tri-State Oil Co. No. 1 Kinkel. S.D.O. 3,571 ft.; last report.

Fisher County

Dibrell & Patton No. 1 J. B. Stribling, sec. 110, Blk. 3, H.&T.C. Sur. Spd. and S.D.

Floyd County

Mills Bennett No. 1 T. Montgomery, F. J. Latham Sur., 6 mi. S of Floydada. Rng. whipstock 5,014 ft.; last report.

Gaines County

C. M. Cope et al No. 1 Riley, Blk. G, sec. 249, W.H.R.R. Sur. S.I.; bldg. storage.

Eastland Oil Co. No. 1 R. C. Dunbar, sec. 24,Blk. A-12, P.S.L. Sur. Prep. retreat 4,640 ft.

Riddle & Warr No. 1 J. B. Brown et al, sec. 26, Blk. G, C.&M.R.R. Sur. Cellar.

Garza County

Gulf Oil Corp. No. 1 Swanson, sec. 25, Blk. 2, H.&G.N. Sur. Drlg. 5,150 ft.

Glasscock County

O. B. Greathouse No. 1 Burns, sec. 231, Blk. 29, W.&N.W. Sur. Rng. 12½-in. 180 ft.

Hockley County

Gulf Oil Corp. No. 1 Mallett Ld. & Cattle Co., sec. 6, Blk. X, P.S.L. Sur. P.B. 5,036 ft.; pump 28 B.O.P.D.

Howard County

H. N. Harriss No. 1 Guitar, sec. 17, Blk. A, Bauer & Cockrell Sur. Abd. loc.

Lockhart Oil Co. No. 1 Scott, sec. 86, Blk. 29, W.&N.W. Sur. C.O. 2,865 ft.

Magnolia Pet. Co. No. 5 O'Daniel, sec. 34, Blk. 30, T.&P. Sur. Drlg. 2,180 ft.

T. G. Shaw No. 1 H. N. Wilkerson, sec. 35, Blk. A, Bauer & Cockrell Sur. Loc.

Hudspeth County

Haymon Krupp Oil & Ld. Co. No. 1 Thaxton, SE¼ sec. 34, Blk. 74, Twp 6. Drlg. 4,482 ft.

Haymon Krupp No. 1 Briggs, sec. 24, Blk. 73, Twp. 7, T.&P. Sur. Drlg. 4,135 ft.; gas shows.

Jeff Davis County

Joiner Oil Corp. No. 1 Jones-Coffield. Prep. U.R. 7-in. 3,418 ft.

Lynn County

John L. Baldridge No. 1 Alma Lbr. Co., sec. 151, H.E.&W.T. Sur. R.U.S.T. 4,450 ft.

Martin County

W. D. Anderson No. 1 J. R. Vance, sec. 9, Blk. 36, T.&P. Sur. Drlg. 855 ft.

Menard County

C. D. Haggerty No. 1 Callon, sec. 36, Jim Franz Sur. Drlg. 710 ft.

Hartzell-Nawn & O'Hara No. 1 Wilhelm, sec. 24, Blk. A-1735, Indianola R.R. Sur. S.D.O. 655 ft.

Pecos County

Cox & Moore No. 1 White & Baker, sec. 43, Blk. Z, T.C.R.R. Sur. Fsg. 290 ft.

Ed Fainey No. 1 Trees, sec. 63, Blk. 8 H.&G.N. Sur. Prep. R.U.R. to drill by tools.

J. D. Kugle, Jr., No. 1 W. C. Jackson, sec. 120, Blk. 8, H.&G.N. Sur. C.O. 2,060 ft.

Carl S. Leidecker No. 1 Iowa Trust, sec. 73, Blk. 10, H.&G.N. Sur. D.&A. 2,095 ft.

Magnolia Pet. Co. No. 1 McKee. Prep. test 6,165 ft.

E. R. Minshall et al No. 1 Haynie, sec. 28; Blk. 146, T.&St.L. Sur. U.R. 10-in. 1,-600 ft.

S. Thompson No. 1 Elsinore Cattle Co., sec. 54, Blk. D, G.C.&S.F. Sur. S.D. 7,212 ft.

Trans-Pecos Oil Co. No. 1 Gallagher, T.&P. Sur. S.D. 2,240 ft.

Trans-Pecos Oil Co. No. 3-A Papham, G.H.&S.A. Sur. S.D. 2,015 ft.; last report.

Presidio County

L. C. Brite No. 4 fee, C NW¼ sec. 113, Blk. 12, G.H.&S.A. Sur. S.D.O. 5,427 ft.

Reeves County

Grisham Hunter Corp. & N. A. Grisham No. 1 Geo. Daniel, sec. 40, Blk. 58, T.&P. Sur. Drlg. 3,913 ft.

Ohio Oil Co. No. 1 Papham, sec. 18, Blk. 54, T.&P. Sur. U.R. 12½-in. 1,742 ft.

Runnels County

Stevens & Glober No. 1 Fowler, sec. 150, E.I.R.R. Sur. S.D. 1,355 ft.

Scurry County

Coffield & Guthrie No. 1 E. E. Spears et al, sec. 130, Blk. 97, H.&T.C. Sur. Fsg. 8-in. csg. 1,612 ft.

Robinson Drlg. Co. No. 1 Martin, sec. 147, H.&T.C. Sur. S.D.O. 3,515 ft.

Sterling County

Loffland Bros. & Moore Bros. No. 1 D. D. Parramore, sec. 23, Blk. 2, H.&T.C. Sur. U.R. 12¼-in. csg.

J. W. Sward No. 1 Brennand, sec. 107, Blk. 2, H.&T.C. Sur. Drlg. 1,420 ft.
W.F.W. Oil Co. et al No. 1 R. W. Foster, sec. 9, Blk. 13, S.P.R.R. Sur. M.I.M.

Stonewall County

Bert Fields No. 1 J. M. Lee, J. E. Pierson Sur. S.D. rotary 125 ft.
General Crude Oil Co. No. 1 J. D. Smith, sec. 371, Blk. 2, H.&T.C. Sur., 12 mi. N Rotan. Drlg. 4,184 ft.
Swanson & Parriott No. 1 H. T. Carlisle, sec. 293, Blk. D, H.&T.C. Sur. U.R. 7-in. 4,211 ft.

Terry County

L. E. Hults No. 1 P. J. Ross, sec. 6, Blk. D-14, C.&M.R.R. Sur. R.U.S.T. 4,749 ft.

Tom Green County

Humble O. & R. Co. No. 1 Lewis & Ward law, sec. 5, Blk. 17, H.&T.C. Sur. Rng. electrical survey 7,586 ft.; last report.
Spinner No. 1 Reed, Mason Ferry Ranch Sur. Fsg. 4,495 ft.

Upton County

Flippen & Hancock No. 1 Shirk Est., sec. 7, Blk. 3, M.K.&T. Sur. W.O.C. 2,678 ft.; last report.
W. D. Riser et al No. 1 King Ranch Oil & Lignite Co., sec. 8, Blk. 3, M.K.&T. Sur. S.D. 730 ft.

Val Verde County

J. F. Carter et al No. 1 Seller & Sons, sec. 34, Blk. A, I.&G.N. Sur. Spd. and S.D. (last report).

Ward County

M. J. Delaney No. 1 J. E. Cooper, H.&T.C. Sur. Tstg. 2,092 ft. (last report).
J. E. Fitzpatrick et al No. 1 H. B. Carr, sec. 125, Blk. 34, H.&T.C. Sur. S.D.R. 1,325 ft. (last report).
J. E. Fitzpatrick et al No. 1 F. K. Dyer, sec. 135, Blk. 34, H.&T.C. Sur. Drlg. 4,655 ft.
Hoss & Downey No. 1 Meyers, sec. 17, Blk. 32, H.&T.C. Sur. C.O. 1,945 ft.
Hoss & Downey No. 1 Ross Avery, sec. 36, Blk. 1, H.&T.C. Sur. S.D. 2,000 ft.
Mahree No. 1 Wilson, sec. 133, Blk. 34, H.&T.C. Sur. S.D. lost tools at 5,099 ft.
John Poindexter No. 1 V. Meyers, sec. 17, Blk. 32, H.&T.C. Sur. Drlg.
S. J. Rixford No. 1 W. B. Crump, sec. 2, Blk. 34, H.&T.C. Sur. R.U.M.
O. E. Schkode No. 1 Boogher, sec. 1, Blk. 32, H.&T.C. Sur. Tstg. 278 B.O.P.D.; S.I. storage full 2,078 ft.; C.O. 2,105 ft.
Texas Co. No. 1-F Univ., Univ. Sur., Blk. 16, sec. 15. drlg. 2,794 ft.

Winkler County

Ed. L. Gelder No. 1 R. D. Kessler & F. Kessler, sec. 14, Blk. B-3, P.S.L. Sur. Drlg. 3,086 ft.
Magnolia Pet. Co. No. 13 State-Walton, sec. 14, Blk. B-3, P.S.L. Sur. Loc.

Yoakum County

Gulf No. 1 J. C. Futch, sec. 796, Blk. D. J. H. Gibson Sur. C.O. 5,170 ft.
Gulf States Oil No. 1 Graham, sec. 267, Blk. 3, J. H. Gibson Sur. D.&A. 5,375 ft.
Helmerich & Payne No. 1 S. O'Dowd, sec. 896, Blk. D, J. H. Gibson Sur. R.U.R. to drill by tools.

E. C. TEXAS WILDCATS

Angelina County

J. C. Bonham No. 2 Cameron Lbr. Co., E. Miller Sur., 3 mi. SE of Zavalla. D.&A. 2,565 ft.
Ginter Bros. No. 4 Copes Heirs, J. Morin Sur., 8 mi. S of Dibol. R.U.M.

Camp County

W. C. McGlothlin No. 1 Joe Venters, S. Wright Sur., 3 mi. SE of Leesburgh. Drlg. 3,342 ft.

Cherokee County

Commerade Oil No. 1 J. M. King, W. Bartie Sur., 5 mi. W of Rusk. Drlg. 5,510 ft. (last report).
J. G. Mayo No. 1 Travis, T. Quevada Sur., 2 mi. SE of Mt. Selman. Plts.

Dallas County

Markraley No. 1 R. S. Morris, C. Gibbs Sur., 2 mi. S of Grand Prairie. D.&A. 2,636 ft.
Plaza Oil Co. No. 1 Davidson, Marchant Sur., 1 mi. NW of Seagoville. Drlg. 2,360 ft.

Ellis County

Julian Ivy No. 1 Sadie Serf, C. J. Chambers Sur., 6 mi. E of Alma. S.D. 800 ft.

Gregg County

Humble O. & R. Co. & Gulf O. Corp. No. 1 E. Robertson, M. Mann Sur., 2½ mi SW of Longview Trinity test. El. 279 ft.; plugging back to test.

Henderson County

Hager & Jones No. 1 Coleman & Faulk, R. S. Rayburn Sur., 2 mi. NW of La Rue. S.D.O. 3,395 ft.
Jones-Mallory No. 1 A. Mallory, T. S. Mitchell Sur., 6 mi. SW of Mabank. S.D. 107 ft.
L. Johnson No. 1 J. L. and W. D. Coffee, S. Whitley Sur., 5 mi. SW of Paynes. Drlg. 70 ft.
Richards & Holloway No. 1 J. P. and T. Tarkington, W. Kenewell Sur., SE of Flag Lake. M.I.M.
Texas Co. No. 1 I. A. Nolan Parsons Sur., 1 mi. SW of Flag Lake. Comp., 75 B.O.P.D.

Houston County

Humble O. & R. Co. No. 1 Daily & Taylor, J. G. Thompson Sur. Drk.
Sun Oil Co. No. 1 R. S. and H. H. Daily, J. G. Thompson Sur., 3 mi. SE of Navarro Crossing. Rng. csg. 5,873 ft.

Lamar County

Dahl & Barr No. 1 Lewis & McQuiston, R. Russell Sur., 1 mi. NE of Paris. Drlg. 840 ft.

Limestone County

J. S. Cosden, Jr. No. 1 J. J. Bower, J. Breeding Sur., near Prairie Hill. Drlg. 1,011 ft.

McLennan County

A. C. Kilgore No. 1 Hanzelka, 4 mi. E of town in NE cor. cty. Drlg. 450 ft.
Kilgore No. 1 J. M. Marrs, J. S. Rutland Sur., 2 mi. S of Bosque. S.D. 1,455 ft.
Lisle Steele No. 1 C. H. Cherry, M. Martinez Sur., 4½ mi. SE of Waco. W.O.C. 40 ft.
Russell & Thompson No. 1 L. L. Phillips, C. O. Campo Sur., 4 mi. S of Waco. Drlg. 849 ft.

Madison County

C. K. Handy No. 1 D. G. Cannon, D. Arriola Sur., 6 mi. NW of Madisonville. S.D. 236 ft.

Navarro County

J. O. Griffiths No. 1 Haynes, Able Parsons Sur., 4 mi. NE of Kerens. Loc.
Mrs. Jane Robinson No. 1 Fortson Bros.-Ell Smith Sur., 5 mi. NE Corsicana Drlg. 2,750 ft.

Red River County

Daniels et al No. 1 J. J. Gaston, J. Guest Sur., 2 mi. S of Detroit. W.O.C. 21 ft.
Texas Trading Co. No. 2 So. Pine Lbr. Co., D. D. Bruton Sur., 12 mi. N of Clarksville. S.D.W.O. 2,154 ft.
Walters et al No. 1 Phamplin, W. Moore Sur., 3 mi. SE of Kanawha in NW part of county. W.O.C. 68 ft.

Rusk County

J. W. Merrick et al No. 1 Peter Tipps, T. Uzzell Sur., 6 mi. S of East Texas field and 5 mi. N of New Salem. Deepening from 3,888 ft.; prep. set csg.

Smith County

H. L. Hunt et al No. 1 S. H. Bradly, T. P. Payne Sur., 10 mi. E of Tyler at Chappel Hill. W.O.C. squeeze job 3,881 ft.

Titus County

L. Umbernhour No. 1 Sykes, J. Mathews Sur., 1 mi. N of Winfield. O.T.D. 3,888 ft.; prep. deepen.

Trinity County

Boone & Jordan No. 1 U. S. Crouch, Joel Clapp Sur., 7 mi. N of Trinity. W.O.C. 200 ft.
Gassage et al No. 1 Mrs. C. H. Elliot, Joel Clapp Sur., 6½ mi. N of Trinity. Drk.

Upshur County

E. J. Dupree No. 1 W. A. Lawrence, R. Polly Sur., 4 mi. S of Gilmer. P.B. 3,520 ft.; S.D.W.O.
Tom Hunter and American Liberty No. 1 J. P. Carter, J. H. Fields Sur. Drlg. 9,211 ft.

Van Zandt County

Hines & Hancock No. 1 J. L. Chitty, N. Neal Sur., 7 mi. SW of Canton. D.&A. at 2,180 ft.
Richards & Holloway No. 1 Chitty, 1 mi. SW of Jackson. Drlg. 3,575 ft.

NORTH TEXAS WILDCATS

Archer County

Adams O. & G. Co. No. 1 C. Moer, sec. 21, C.&P. Sur., Blk. 3. S.S.O. 4,135-65 ft.; tstg.
Burns & Omohundro No. 1 Dr. A. B. Edwards, Blk. 44, L. P. Hunt Subd., 5,300-ft. test. 10-in. 123 ft.; W.O.C.
Camp Drlg. Co. No. 1 H. Harmel, sec. 2,460, T.E.&L. Sur., 4,000-ft. test. Drlg. 4,408 ft.
Fain-McGaha Oil Corp. No. 1 R. W. Fuller, Blk. 1, H.&T.C. Sur., 6,000-ft. test. 6⅝-in. 5,105 ft.; bk. sat. L. 5,109-36 ft.; swbg. hole and showing oil and gas; will treat with acid.
Harvey Drlg. Co. No. 1 J. J. Perkins, sec. 7, A.N.T.C.L. Sur. Drlg. 3,950 ft.
Helmerich & Payne et al No. 2 L. F. Wilson, Blk. 25, A.T.N.C.L. Sur. Testing at 5,105-16 ft.
Hines & Hancock No. 1 J. L. Anderson, Blk. 23, Anderson ranch, 4,000-ft. test. Drlg. 3,800 ft.
Hines & Hancock No. 1 W. R. Hammond, H. Corzine Sur. A-56. Drlg. 2,870 ft.
Louis Sikes et al No. 1 Ford, T. M. Cecil Sur. A-982. 4,500-ft. test; tstg.; 6⅝-in. 4,170 ft.; W.O.S. and S.S.O. 4,123-67 ft.
Thos. A. Jirik No. 1 Kunkel, sec. 2, P.R.R. Sur. A-1186. 10-in. 200 ft.; W.O.S.R.
Lacreta Pet. Co. No. 1 L. H. Farmer, W. C. Winters Sur. A-663, 4,000-ft. test. Drk.
Reno Oil Co. No. 10 H. Wilmut A, sec. 4, S.P.R.R. Sur. A-1044. S.S.O. 3,760-66 ft.; 6⅝-in. 3,750 ft.; W.O.C.
Westmount Oil Co. No. 7 T. J. Dempsey-Denton Co. Sch. Ld., sec 10. Drlg. 3,600 ft.

Baylor County

Riddels, Pipes & Holcomb No. 1 W. H. Nichols, Jr., sec. 117, B.B.B.&C. Sur. A-85. Loc.
Wilcox O. & G. Co. No. 1 W. H. Portwood, sec. 3144, T.E.&L. Sur. Drlg. 895 ft.

Clay County

Walter Gant No. 1 Bryant Edwards. S. C. Beldon Sur. A-12, 6,000-ft. test. C.O. 4,713 ft.
Joe Rogers No. 1 C. P. Davis, Blk. 6, Montague Co. School Land Sur. A-307, 4,500-ft. test. Spud. and S.D.
Wood Pet. & Roy. Corp. No. 1 I. H. Kempner, Blk. 44, Bosque Co. Sch. Ld. Sur. A-10. S.D.O. 2,330 ft.

Cooke County

Sinclair Prairie Oil Co. No. 1 J. M. Best, T. Toby Sur. A-1054. Drlg. 4,805 ft.
Sunset Oil Co. No. 1 J. T. Donald, S.P. R.R. Sur. A-971. 3,500-ft. test; S.S.O. 4,887-96 ft.; rng. 9⅝-in. test.

Jack County

Noah Daves No. 1 K. D. Baker, sec. 2709, T.E.&L. Sur. 4,000-ft. test; drlg. 1,830 ft.
Harper Pet. Co. 1 Mary E. Norman. A. Pearson Sur. A-1304. O.S. 1,937-38 ft.; testing.

Montague County

H. H. Powell No. 1 Arch Durham, W. J. Wagoner Sur. A-936. S.D. 822 ft.
J. W. Sorrell et al No. 1 J. E. Walthall, Sam H. Smith Sur. A-662. S.D. 3,777 ft.

Wichita County

C. W. Boller No. 1 S. Y. Collins, Charles Roberts Sur. A-540. 6⅝-in. 3,855 ft.; brkn. sdy. L. and O.S. 3,860-3,900 ft.; testing.
Geo. W. Cooper No. 1 Parker, sec. 13, H.&G.N. Sur. 6⅝-in. 2,594 ft.; P.B. 2,-635 ft.; test L. 2,594-2,635 ft.
Madden & Goldsmith No. 1 Jackson, Blk. 20, Denton Co. Sch. Lds. S.D.O. 4,505 ft.
Shell Pet. Co. No. 1 Reilly, F. Jordan Sur., Abst. 167. 6⅝-in. 3,815 ft.; tstg. sdy. L. 3,838-88 ft.

Young County

Byars & King No. 1 Street, sec. 303, T.E.&L. Sur. Drlg. 3,730 ft.
Cosden Oil Co. No. 1 Price, Y.C.S.L. Sur. No. A-1285. Drlg. 2,900 ft.
Cosden Pet. Corp. No. 1 D. R. Sewell B, J. Bray Sur. A-1949. Drlg. 3,750 ft.
Fain-McGaha No. 1 Logan, Blk. 18, Holeman Sur. Drlg. 4,701 ft.
Horwitz & Oldom No. 1 C. J. Taach B, sec. 248, T.E.&L. Sur. R.U.S.T.

RANGER (CENTRAL TEXAS) DISTRICT

Callahan County

Cooper, Weeks & Hughes No. 1 C. D. Straley, 660 ft. from W L, 1,880 ft. from N L, sec. 370, Geo. W. Denton Sur. Ordovician test; drlg. 3,850 ft.
Joe Gallagher No. 1 W. T. Harris, 200 ft. from S line, 1,050 ft. from E line sec. 347, G. W. Denton Sur. 2,000-ft. test, 5 mi. N Oplin. Drlg. 700 ft.
J. H. Howell No. 1 E. I. Vestal, 1,149 ft. E line, 1,000 ft. N line, Jesse Dyson Sur., 2 mi. NE Cross Plains, rotary to 4,000 ft. Surf. to 100 ft.; resumed, drlg. 1,800 ft.
J. C. Jackson et al No. 1 Thompson, 2 mi. S. Eula, sec. 30, B.B.B.&C. Sur. S.D. 1,803 ft.; drlg. 2,390 ft.
Petroleum Drlg. Co. No. 1 Cook & Jordan, 760 ft. from E L, 1,838 ft. from N L, sec. 350, Geo. Hancock Sur. Ordovician. Drlg. 2,500 ft.
Wittmer Oil & Gas Properties, Inc., No. 1 R. D. Williams et al, 300 ft. from N line, 467 ft. from W line sec. 2,269, T.E.&L. Sur., 2 mi. NE Putnam, 4,500-ft. test. Set 12½-in. at 1,048 ft.; show oil 1,795-1,803 ft.; set 10-in. 2,556 ft.; S.O. in Ellenburger 4,077 ft.; drl. sulf. wtr. 4,115 ft., T.D.; P.B. to shoot 300 guts., 3,280-3,435 ft.; top Caddo L. 3,262 ft.

Coleman County

Anzac Oil Corp. et al No. 1 Sparkman, Samuel Crooks Sur. Drlg. 1,640 ft.
Anzac Oil Corp. No. 1 Burk, A. Williams Sur. Drlg. 220 ft.
F. L. and E. R. Cooper No. 1 W. R. Stockard, 330 ft. from NL, 330 ft. from WL, N½ SE¼ sec. 23, T.&N.O. Sur. Rotary to 3,650 ft.
S. M. Devine et al No. 1 Masterson, 2 mi. W of Burkett, Asa Wickson Sur. S.D. 2,000 ft.
Garrett Oil Co. No. 1 W. S. Smith et al., 4 mi. SE Coleman, J. Thiele Sur. 2,300-ft. test; T.D. 2,035 ft., show gas; set csg. and tstg.

Eastland County

Dobbs Oil Co. No. 1 Greer, J. E. Hardy Sur., Ellenburger test. Drlg. 300 ft.
Hayner, Reaves & Hose No. 1 P. L. Larkin, 3 mi. NW Rising Star, 912 ft. from W line, 546 ft. from S line, NW¼, sec. 40-2, E.T.R.R. Sur. S.O. 2,525-53 ft. and 2,574-95 ft.; cmt. 7-in. 3,004 ft.; W.O.C.

Fisher County

Forest Dev. Corp. & Daube No. 1 L. G. Bennett, 660 ft. from N & E lines, sec. 51-3, H.&T.C. Sur. Rotary to 4,500 ft.; 3 mi. SW of Rotan. Set 10-in. at 300 ft.; drlg. 2,440 ft. in Dolo.
Owens-Snebold & A. C. Varner No. 1 J. H. Milsap, 3,500-ft. wildcat, 2 mi. NW McCaulley, 330 SL 330 WL, sec. 61-2, H.&T.C. Sur. Drlg. 1,429 ft.

Haskell County

Fain-McGaha Oil Corp. No. 1 T. G. Hendrick, C W½ sec. 104, Indianola Ry. Sur. Set 150 ft. of 12½-in. S.S.G. 1,620-30 ft.; T.D. 2,686 ft.; water; attempting to plug back.
Forest Dev. No. 2 A. E. Pardue, 2,100 ft. from N line, 550 ft. from W line, M. Collum Sur. No. 4. Top Adams Branch 2,794 ft.; cored oil sat. 2,806-07 ft.; cmt. 7-in. 2,794 ft.; dr. to 2,816 ft., T.D.; flowed 60 bbls. hourly through csg.
J. W. and A. E. McMillan No. 1 A. E. Pardue, 440 ft. from N and W lines, S½ M. Collum Sur. No. 4 A-685. Rotary to 3,500 ft.; oil 2,810-54 ft.; cored 2,835-54 ft.; set 6-in. to T.D. and cmtd. 125 sacks; shot 39 perf. from 2,810-44 ft.; wtr.; shot 44 perf. 2,795 to 2,815 ft., filled 375 ft. in 15 min., set packer to cmt off bottom wtr.; pumped 162 bbls. in 24 hrs., 5 per cent wtr.

Jones County

Brown Eagle & C. J. Kleiner No. 1 Sullivan Heirs, 330 ft. S&E of 200-ac. tract in S. Andrews Sur. 191. Drlg. 1,787 ft.; U.R. 6-in. to 2,200 ft.; to acidize; show oil 2,200-03 ft.; T.D. 2,223 ft.
Dunigan Bros. and Fred Hyer No. 1 Gaither, 4½ mi. N of Anson, sec. 38, B.B.B.&C. Sur. Tested ½ bbl. oil per hr. 2,442-47 ft.; drlg. 2,450 ft.
R. B. Farris No. 1 Chas. Donohoo, 220 ft. from S and E lines, N½ sec. 5, B.B.B. &C. Sur. Rlg.
Humble No. 1 Riley Horton, 330 ft. from N line, 330 ft. from E line, sec. 40-18-T.&P. Sur. Drlg. 2,050 ft.
Iron Mountain No. 1 D. J. Herbst, 5 mi. E Hamlin, 330 ft. from N and E Sub. 18, Austin Williams Sur. 339. Set 10-in 2,245 ft.; wtr. 2,900-05 ft.; H.F.W. 3,150 ft.; drlg. 3,260 ft.
Chas. J. Kleiner No. 1 Mrs. A. E. Carlson, 333 ft. from S and E lines, NW¼ sec. 19-3, H.&T.C. Sur. Drlg. 800 ft.
F. W. Martin No. 1 B. N. Herndon, 330 ft. from S and W of NW sec. 1, M.E.&P. Sur. H.F.W. 3,240 ft.
F. W. Merrick et al No. 1 C. A. Cox, cent. Cox 119-ac. tr., J. H. Hughes Sur. No. 201. Sho. O.&W. 2,322-28 ft.; U.R. 6-in. to 2,560 ft., T.D.
Oil States Exploration No. 1 J. E. Sellers, 100 ft. from S line, 330 ft. from W line, S. Andrews Sur. 191. Drlg. 1,220 ft.
L. H. Pearson No. 1 B. L. Hood, 1,100 ft. from S and W lines, W. T. Evans Sur. No. 1. Rigging.
W. L. Snoddy & C. C. Dodson No. 1 C. L. Steffens et al, 220 ft. from S and W lines SW¼ NE¼ sec. 32-15, T.&P. Sur. U.R. 8-in. to 1,810 ft., T.D.
Ungren & Frazier No. 1 W. E. Fellows, 990 ft. from N line, 330 ft. from E line, S½ sec. 25-15, T.&P. Sur. Drlg. 1,875 ft.

Nolan County

Hantho-Nelson, Inc., No. 1 J. H. Withers, C SW¼ sec. 65-21, T.&P. Sur. Wildcat to drill 4,000 ft. Spd. to 200 ft. W.O. rotary.

Shackelford County

Danciger No. 3 J. E. McCown, 300 ft. from N and E lines, S½ SE¼ sec. 158, B.B.B. &C. Sur. Top Palo Pinto 3,284 ft., oil; cem. 6-in. csg.; W.O.C.
Joe DeGrazier No. 1 Harbough, E cen. part of county, sec. 1,563, T.E.&L. Sur 4,500-ft. test; H.F.W. 2,185-95 ft.; drlg. 2,600 ft.
Forest Dev. & Helmerich & Payne No. 1 T. G. Hendrick, C sec. 1, A.B.&M. Sur. Drlg. 3,960 ft.
J. G. Hammond No. 1 Coker, 1,620 ft. from S line and 1,020 ft. from W line, sec. 159, B.B.B.&C. Sur. Drlg. 2,300 ft.
Ungren & Frazier No. 1 J. S. McKeever, 306 ft. from W line, 354 ft. from N line, NW¼ SW ¼ sec. 14-3, H.&T.C. Sur. 3,500-ft. test.; gas at 1,475 and 1,492 ft.; set 10-in. 1,539 ft.; est. 100,-000 ft. gas 1,745 ft.; set 10-in. to 1,907 ft.; top Palo Pinto 3,196 ft.; S.S. oil 3,215-18 ft.; oil 3,253-55 ft.; 1 bbl. hrly. 3,265-70 ft.; drlg. 3,272 ft. with H.F.W.

Stephens County

Graham, Hafner, Lane & Inman No. 1 J. N. Yocum, 5 mi. SE of Frankell, 250 ft. from N and E lines of farm or approx. 2,525 ft. from E line and 1,400 ft. from S line of John R. Carter Sur. Trt. 1,000 gal acid 3,575-90 ft.; est. 25-50 bbls. per day; drlg. 3,455 ft.
Lone Star No. 1 J. S. McKee, 660 ft. from N line, 660 ft. from W line, sec. 41-7, T.&P. Sur. Drlg. 2,200 ft.
G. Willard Rich No. 1 J. W. Andrews, 330 ft. W line, 450 ft. S line, NW¼ sec. 39-7, T.&P. Sur. Set 12½-in. at 1,620 ft.; drlg. 3,350 ft.

Stonewall County

Bert Fields No. 1 R. P. Pierson, C of E 80-ac., E. A. & S. M. Lee Sur. Abst. 817. M.I.R.
General Crude Oil Co. No. 1 J. D. Smith, SW cor. county, 330 ft. from S and E lines of sec. 371, H.&T.C. Sur., Blk. 2. Set 13⅜-in. 2,119 ft.; set 10-in. at 3,508 ft.; cmt. 150 sacks; S.S.O. at 3,970 ft.; U.R. 8-in. 4,105 ft.

Taylor County

Lewis Production No. 1 L. Hensiee, 330 ft. from E L of 234-ac. tract in J. A. Nabors Sur. No. 10 and sec. 27-17, T.&P. Sur., 4 mi. E of Merkel. Drlg. 1,360 ft.

Throckmorton County

Jones & Stasney No. 1 C. T. Brockman, 330 ft. S line, 330 E line sec. 95, Comanche Indian Sur. Est. 5 to 10 million ft. gas 1,434-48 ft.; drlg. 2,260 ft.
Mariand-Drake No. 1 Dickie Bros., center T.E.&L. Sur. 2226. Set 5-in. 3,925 ft.; S.S.O. 3,938-43 ft.; 5,000 gals. acid.; testing.
White & Duncan No. 1 Reynolds Cattle Co., 330 ft. from S and W lines, NE¼ sec. 83, Comanche Indian Reservation. Set 10-in. at 1,405 ft.; drlg. 2,200 ft.

Market Record of Active Oil Stocks

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1938 High	1938 Low	Week ending May 28 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1937	1937 High	1937 Low	1936 High	1936 Low
75½	57	2,200	59¾	55	55	Amerada Corp.	788,675	N.P.	50cQ	4-30-38	$2.00	114⅞	51½	125½	75
24	17¾	4,900	20⅝	19⅞	20	Atlantic Refining	2,663,999	$25	25cQ	6-15-38	1.00	37	18	35½	26⅝
19	12½	2,100	15½	13⅝	14¼	Barber Co.	387,149	$10	75c	12-16-37	1.00	43⅜	10¼	38½	21
16⅜	10⅛	12,900	12⅞	11½	11⅞	Barnsdall Oil Co.	2,250,344	$5	25cQ	5-2-38	1.00	35¼	10	28¼	14⅛
10½	7	14,300	8⅜	8	8	Consolidated Oil Corp.	13,919,417	N.P.	20cQ	5-14-38	.90	17⅜	7	17¼	11⅛
34⅜	21¼	7,300	25½	23¼	24	Continental Oil of Delaware	4,682,583	$5	25cQ	6-30-38	1.50	49	24	44⅞	28⅛
8⅞	5	6,900	6⅝	5¾	6	Houston Oil (new)	1,098,618	$25	....	10-17-30	....	17⅝	4¾	13⅞	6⅜
22⅝	12¼	3,700	16	14⅛	15	Mid-Continent Petroleum	1,855,912	$10	25c	6-1-38	1.50	35⅝	14	30⅞	17¼
17¾	11	1,400	12	10⅝	10⅝	Mission Corporation	1,399,345	N.P.	25c	12-24-37	1.25	34	15	29⅞	16⅜
23	14⅛	5,200	16	14¼	14¾	National Supply	382,591	$25	$2 pf.‡	12-22-37	(‡)	41⅜	17⅝	75½	19⅜
14⅞	9	11,700	9⅝	9	9⅛	Ohio Oil Co.	6,563,377	N.P.	50c	12-15-37	1.00	22⅞	9	18	12⅛
15⅞	10¼	5,200	10½	10⅜	10⅜	Pacific Western Oil	1,000,000	N.P.	75c	12-15-37	.75	29¾	11¾	23½	11⅜
9¼	7	200	7½	7½	7½	Pan American Pet. & Trans.	4,702,945	$5	$1 •	12-21-37	1.00	17⅛	7	20⅝	12¼
42½	27¼	7,500	31¾	29¾	31	Phillips Petroleum	4,449,052	N.P.	50cQ	6-1-38	2.75	64	30⅛	52⅜	38⅛
20	15	2,200	18	17⅜	17½	Plymouth Oil Co.	1,029,800	$5	35cQ	3-31-38	1.65	29⅞	13	27⅜	11⅞
13½	8¼	13,400	9⅛	8¼	8⅝	Pure Oil Co.	3,281,120	N.P.	25c	12-1-37	.25	24⅝	8¾	27⅞	16
7⅞	5	7,400	5¼	5	5⅛	Richfield Oil Corp.	3,285,120	N.P.	25c	12-24-37	.25	6½	4⅛	..	..
27½	15½	1,100	17¾	17	17	Seaboard Oil of Delaware	1,224,283	N.P.	25cQ	6-15-38	1.00	54⅛	16	44	30⅛
18¼	10	2,600	12⅝	11	11⅛	Shell Union Oil	13,070,625	N.P.	50c	12-20-37	1.00	34⅝	14⅞	28¼	14⅝
34⅜	18½	4,200	21⅛	19¼	20¼	Skelly Oil	1,003,949	$15	50c	12-15-37	1.50	60⅝	26½	47⅜	19⅛
16⅜	10⅜	17,900	12½	12	12¼	Socony-Vacuum	31,151,071	$15	25c	3-15-38	.80	23¼	13	17½	12⅛
33⅞	25⅛	11,200	27	25⅞	26½	Standard Oil of California	13,014,754	N.P.	35cQ†	6-15-38	2.00	50	27⅛	47⅝	35
35½	24¾	7,600	29	27⅝	28	Standard Oil (Indiana)	15,267,030	$25	25cQ	6-15-38	2.30	50	26½	48½	32⅜
35½	32¼	No sales	..	..	..	Standard Oil of Kansas	112,837	$10	$5	12-20-37	5.00	43	30⅝	31	25
54⅛	39¾	17,300	46⅞	43¾	45½	Standard Oil of New Jersey	25,856,081	$25	$1SA†	6-15-38	2.50	76	42	70⅜	51⅛
57⅞	45	500	49¾	48	48	Sun Oil	2,316,484	N.P.	25cQ	6-15-38	$1 & 8% Stk.	77½	44½	91	70
3⅜	1¾	3,600	2⅜	2	2⅛	Superior Oil Corp.	1,388,079	$1	....	....	....	7⅝	1½	6¾	3
44⅞	32⅝	18,900	36½	34⅛	35½	Texas Corp.	10,875,006	$25	50cQ	4-1-38	2.25	65⅛	34⅝	55¼	28⅞
4⅞	2⅝	5,600	3⅜	3	3	Texas Gulf Producing Co.	888,135	N.P.	10c	12-23-37	.10	9⅝	2	8⅞	4⅜
10⅛	7	3,900	8¼	7⅝	7¾	Texas Pacific Coal & Oil	888,237	$10	10c	6-1-38	.40	16⅝	5⅜	15¼	7½
15½	10⅛	9,800	12	11½	12	Tide Water Associated	6,369,175	N.P.	25cQ	6-1-38	1.20	21⅝	13⅛	21⅜	14⅜
21⅝	17⅛	3,700	18⅛	17¾	18	Union Oil of California	4,666,270	$25	30cQ	5-10-38	1.40	28¼	17½	28½	20⅜
23½	20	1,900	21	20	20	Union Tank Car Co.	1,200,000	N.P.	30cQ	6-1-38	1.60	31½	22	31⅝	22⅝
2¾	1⅝	900	2⅛	2⅛	2⅛	Wilcox Oil & Gas	424,839	$5	...	5-10-28	.. .	6¼	1¾	5¼	2¾

*Payable in 3⅛ % notes. †Includes extras. ‡One-tenth share $2 preferred stock.

New York Curb Exchange

1938 High	1938 Low	Week ending May 28 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1937	1937 High	1937 Low	1936 High	1936 Low
9⅜	5	300	6¼	6⅛	6⅛	American Republics Corp.	1,308,049	$10	30c	12-27-37	$0.40	10	6⅝	..	.
10¼	5⅛	500	5¾	5⅛	5⅛	Bridgeport Machine Co.	260,000	N.P.	1.25	12-30-37	$2.00	21⅜	7	21	13¼
39	32½	No sales	..	..	..	Buckeye Pipe Line Co.	200,000	$50	50cQ	6-15-38	3.75	51½	36	50	39⅜
110	97	50	101½	101½	101½	Chesebrough Mfg. Co.	120,000	$25	$1.50Q†	6-27-38	7.00	123	95½	124¾	105
11	7¾	2,600	9¾	8	8¼	Cities Service (new)	37,804,394	N.P.	....	6-1-32	....	5⅜	1⅛	7⅝	3
2⅜	1	4,300	1	1/16	1	Cosden Petroleum	399,687	$1	....	..	....	5½	1½	4½	1⅜
27½	17½	3,100	21½	18¼	18¾	Creole Petroleum	6,974,356	$5	50cSA†	6-10-38	1.00	38⅜	20¼	39	19⅝
8¾	5½	100	7	7	7	Darby Petroleum	351,390	$5	25cSA	7-15-38	.50	18⅝	6½	18⅛	9
3½	2	1,400	2¼	2¼	2¼	Derby Oil & Refining	263,162	N.P.	....	.....	....	8⅜	2¼	6⅜	1⅞
31	22⅝	No sales	..	..	..	Eureka Pipe Line	50,000	$50	$1Q	5-2-38	4.00	47½	24½	47½	38½
42⅞	33	3,800	35½	33⅛	33⅛	Gulf Oil Corp.	9.076,202	$25	25cQ	4-1-38	1.00	63⅛	33	59	36
70	56	2,400	63	57½	58⅛	Humble Oil & Refining	8,923,935	N.P.	37½c	7-1-38	2.00	87	54⅞	80	57
19½	15	2,400	17⅜	16⅞	17	Imperial Oil of Canada	26,919,871	N.P.	62½cSA†‡	6-1-38	1.25	24¼	14½	24½	19⅝
8¼	6⅝	200	7⅛	7	7	Indiana Pipe Line	300,000	$10	30c	5-14-38	.80	15	5⅞	9⅜	5½
31¼	23	3,100	27	26⅛	26¼	International Petroleum	14,247,088	N.P.	$1.25†‡	6-1-38	2.50	39½	23½	39⅝	32⅝
5	3¼	500	3⅜	3⅛	3⅛	Kirby Petroleum Co.	500,000	$1	10c	4-15-38	....	8⅜	2⅜	5⅜	2⅝
25⅛	15⅝	2,800	19	17	18¾	Lion Oil Refining	434,820	N.P.	25cQ	4-20-38	1.50	34	12½	17¾	7⅝
9¼	6⅝	1,000	8	7⅝	7⅝	Lone Star Gas	5,382,723	N.P.	20c	4-20-38	.60	14¼	5¼	14¼	9⅜
9⅜	6½	3,100	7¼	6⅝	6⅞	Louisiana Land & Exp.	3,000,000	N.P.	10cQ	6-15-38	.50	15¼	6⅝	15⅝	9⅜
8½	6⅜	1,500	7¼	7	7	Midwest Oil Co.	998,444	$10	50c	6-15-38	1.00	14⅝	6¼	..	..
5⅝	4½	400	5	4¾	5	Mountain Producers	1,682,182	$10	30cSA	6-15-38	.60	7⅞	4⅛	8⅝	5
14⅝	12⅛	1,500	13½	13¼	13⅜	National Fuel Gas	3,810,183	N.P.	25cQ	4-15-38	1.00	19½	12	23	17⅝
9¼	7⅜	800	7⅞	7⅜	7⅜	National Transit	509,000	$12.50	35cSA	6-15-38	1.00	12½	7¼	15⅜	9¼
2⅝	1½	200	1⅝	1⅝	1⅝	New Mexico and Arizona	1,000,000	$1	1c	12-1-36	....	5	1⅛	6⅝	1⅝
4½	4	No sales	..	..	..	New York Transit	100,000	$5	15c	4-15-38	1.00	5⅜	3⅞	6¼	4¼
6	4	1,200	5	4¾	5	Northern Pipe Line	120,000	$10	20c	6-1-38	1.00	12¾	5¾	9¾	4⅞
7⅜	3¾	8,100	4¾	4⅛	4½	Pantepec Oil	1,608,700	N.P.	....	.....	....	9⅝	2⅜	10⅛	3¼
3½	1⅝	700	2	2	2	Root Petroleum Co.	336,045	$1	25c	2-1-37	.25	13¾	2	19¼	4½
4	2⅛	100	2½	2½	2½	Ryan Consolidated	296,931	N.P.	....	.....	....	6½	2¼	4¾	1⅞
5⅜	3⅜	No sales	..	..	..	Southern Pipe Line	100,000	$10	15cSA	3-1-38	.45	7¼	3⅞	7⅞	3¼
39	28¾	200	33	33	33	South Penn Oil	1,000,000	$25	50cQ†	3-31-38	3.65	56	35	44	32½
22¼	19	50	19	19	19	Southwest Penna. Pipe Lines	35,000	$50	50cQ	4-1-38	2.00	42	20	60	44
18	15	1,300	16¾	16⅜	16⅜	Standard Oil of Kentucky	2,604,790	$10	25c	6-15-38	1.50	21⅛	14⅜	23⅜	17⅛
7½	6⅛	500	6¾	6¼	6¼	Standard Oil of Nebraska	166,403	$25	25c	3-29-37	.25	13¾	8	14⅝	11
22	16¼	200	18⅞	18¼	18¼	Standard Oil of Ohio	753,740	$25	25c	6-15-38	1.50	45	16	40	21⅜
3¼	2⅛	2,400	2½	2⅜	2⅜	Sunray Oil	1,910,119	$1	10c	12-24-37	.25	4⅞	2	5	2⅝
4⅜	3½	300	4	4	4	Texon Oil & Land	336,028	$2	15cQ	6-30-38	.45	7⅝	2	9⅜	5⅜
7⅝	4⅝	2,300	5¼	4⅞	4⅞	Transwestern Oil Co.	750,000	$10	....	.....	....	13⅞	4⅝	..	..
5¼	2¾	13,200	3⅝	3	3⅛	United Gas Corp.	7,818,959	$1	....	.....	....	13⅝	3	10⅝	4

†Includes extras. ‡Payable in Canadian funds. §Of which $1 was in preferred stock.

PERSONAL

B. W. BEEBE has been made district geologist for the British American Oil Producing Company in Wichita, Kans. Mr. Beebe recently resigned as geologist in the office of the vice president of exploration of the Shell Petroleum Corporation in St. Louis, Mo.

JOHN W. VAN TINE, chosen Grand Old Man of the Oil Industry at the International Petroleum Exposition in Tulsa, received the gold medal symbolic of the honor at his home in Bradford, Pa., last week. He made it a holiday instead of going as usual to his oil lease. "I consider this the greatest honor ever conferred on me," Mr. Van Tine said. Turning to his wife, he laughed, "I'm boss now." MRS. VAN TINE retorted, "You always were." They will observe their fifty-ninth wedding anniversary next September.

STANLEY R. COHAGAN, vice president of the Argo Oil Corporation, Fort Worth, Tex., is back at his desk after several weeks in a hospital recovering from two major operations.

HAROLD L. CURTIS, formerly manager of the Metropolitan New York division of the Shell Union Oil Corporation, has been appointed sales promotion and advertising manager, succeeding FRED C. FOY, who resigned. He will assume his new duties June 15. HARRY J. UNDERWOOD, division manager in Philadelphia, will succeed Mr. Curtis.

JAMES G. STEESE, of San Antonio, Tex., independent oil operator in Oklahoma and Texas, has been elected president of Slate Creek Placers, Inc. He will sail from Seattle, Wash., on June 25 to supervise the corporation's gold mining activities in Alaska during the open season. General Steese, a civil engineer by profession, first visited Alaska in 1913 to report upon the proposed government railway project and subsequently served as president of the Alaska Road Commission, chairman of the Alaska Railroad, and director of public works for the territory.

HARRY W. OSBORNE, consulting geologist of Colorado Springs, Colo., will serve as director of the twelfth annual field conference of the Kansas Geological Society, to be held along the front range of the Rocky Mountains in Colorado September 1 to 3, inclusive. He will be assisted by C. E. DOBBIN, United States Geological Survey; A. E. BRAINERD, Continental Oil Company, and ROSS L. HEATON, Bureau of Reclamation, all of Denver. The conference will open in La Junta and proceed southwest across the Apishapa uplift to Walsenburg. Thence in a northwesterly direction it will go through Rye and Beulah to Canon City.

VICTORIA BOZEMAN, of the Standard Oil Company of Louisiana, Shreveport, sailed recently from New Orleans on a three weeks' vacation trip to New York and Washington.

H. R. LINHOFF has been named for president and P. S. MAGRUDER for vice president of the California Natural Gasoline Association for the coming year by the nominating committee. Directors nominated are: R. D. BALTHIS, J. C. BURKS, J. A. CAMPBELL, L. V. CASSADAY, F. E. COYLE, EARLE DERBY, O. C. FIELD, J. C. GILBERT, R. H. GREEN, R. E. HAYLETT, W. A. KIRK, B. A. KOEHLER, W. H. KRAFT, A. C. LYLES, R. S. LYTLE, G. C. McLAREN, WILLIAM MOELLER, JR., H. E. MOULTON, N. H. MULL, W. D. ROPER, T. L. TAGGART, HENRY N. WADE, and L. M. WINDLE.

H. P. LEATHAM, state tax commissioner of Utah and president of the North American Gasoline Tax Conference, has appointed the following conference committee to study diesel taxation: J. D. HADLEY, director gasoline tax division, department of state, Lansing, Mich., chairman; DIXWELL L. PIERCE, State Board of Equalization, Sacramento, Calif., secretary; C. S. HOLMBERG, director Department of Gasoline Tax, Chicago, and A. P. DELAHUNT, American Petroleum Industries Committee, New York.

HERBERT R. GALLAGHER, president of the Consolidated Oil Corporation, has accepted chairmanship of the committee soliciting contributions of firms in the petroleum industry in the $10,000,000 campaign of the Greater New York fund to supplement finances of private welfare and health agencies. JOHN A. BROWN, president of the Socony-Vacuum Oil Company, is chairman of employe groups. Among gifts announced are $35,000 each from the Standard Oil Company of New Jersey and the Socony-Vacuum Oil Company.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

Henry Kendall College, Tulsa, adds geology to its course of studies.

Attorney General Looney of Texas asks for penalties amounting to $99,275,000 against companies and individuals charged with violation of Texas' antitrust law. Standard Oil companies of New York and of New Jersey, Magnolia Petroleum, John D. Rockefeller and others are the defendants.

Secretary of the Interior Lane began hearings on June 4 on the question of renewing the Foster lease in the Osage Indian Nation in Oklahoma, covering 680,000 acres and now owned by the Indian Territory Illuminating Oil Company. J. W. Zeveley is representing I. T. I. O.

The price of all grades of Kansas and Oklahoma crude oil is 88 cents per barrel; North Texas, 95 cents; Gulf Coast, 80 to 95 cents; Pennsylvania Grade, $2.50; Illinois, $1.30; Lima, $1.34 and $1.39; Indiana, $1.34; Kentucky, 70 cents and $1.35.

20 YEARS AGO

W. E. Hupp, Cleveland, Ohio, oil operator, pays $60,000 for a residence in Dallas, Tex., and will reside there.

Prairie Oil & Gas Company drills a dry hole in Banner County, Nebraska, but does not give out how deep the well was drilled. It was in section 33-19n-55w.

The Empire Gas & Fuel Company has a production of 55,000 barrels per day in Butler County, Kansas.

10 YEARS AGO

Development of the air-gas lift has led to production methods and results before thought to be impossible.

H. W. Hoots, formerly with the United States Geological Survey, has joined the geological staff of the Union Oil Company of California.

Sixty-seven oil wells completed in West Texas in May averaged 5,310 barrels per well in initial 24-hour production.

Earl A. Trager has been made chief geologist of Skelly Oil Company.

W. C. COOLIDGE, division manager of the Atlantic Refining Company's production department, Houston, Tex., has returned to his office following an extended illness.

LLOYD NASH, of Fort Worth, Tex., formerly with the Securities and Exchange Commission, has resigned to become associated June 15 with Tide Water Oil Company in Houston, Tex.

DAN MORAN, president of the Continental Oil Company, has been on tour of that company's West Texas and New Mexico properties, accompanied by H. B. SIMCOX and J. C. JOHNSON, general superintendent and assistant respectively, of Fort Worth, Tex.

JOHN C. COLLIGAN, supervisor of the Texas Pipe Line Company, Dallas, Tex., who retired June 1 after more than 36 years of service with the Texas Company, was honor guest at a dinner given by associates in Houston, Tex., Monday of this week. Mr. Colligan was the first man on the company pay roll, being employed at the organization of the Texas Fuel Oil Company, predecessor of the Texas Company, in Beaumont, Tex., in the Spindletop boom.

JOHN M. VETTER, chief geologist, has been appointed supervisor of the land and geological department of the Pan American Production Company, Houston, Tex. The new position was created through consolidation of the land and geological departments of the company following the resignation of T. W. MADGETT, head of the land department. V. I. GRISHOM, formerly with the Shell Petroleum Corp., has been made assistant in charge of the land department. G. J. SMITH, who has been assistant to Mr. Vetter, will continue as assistant in charge of the geological department.

PARAGRAPHS

J. A. LAKE, JR., Greenville, Miss., and C. R. LAKE, DOUGLAS McDONALD, N. R. PRICE, and F. H. SPAULDING, of Shreveport, La., have filed a charter in Caddo Parish, Louisiana, for incorporation of Co-Service Oils, Inc.

A. A. WEISKE has been named chairman of the Marquette County (Wisconsin) Petroleum Industries Committee, affiliated with the state committee formed by wholesale and retail dealers. FRED SCHMUDLOCK, Montello, and W. W. KRENTZ, Westfield, are vice chairmen; JOHN SWEENEY, Endeavor, local affairs chairman; ELMER KIETZMAN, Westfield, legislative chairman.

EDWARD L. SHEA, executive vice president of Tide Water Associated Oil Company, New York, was host at the Whitehall Club last week to two Bayonne refinery employes who recently completed 50 years' service with the company. They were FRANK S. TURBETT, supervisor of the sales coordination department, and JAMES HALLORAN, supervisor of the mechanical department.

H. P. TAUBMAN, president of the Buffalo Oil Company, formerly of Tulsa, Okla., has moved to Dallas, Tex.

J. EDGAR PEW, Philadelphia, Pa., vice president of the Sun Oil Company, visited his company's divisional office in Dallas, Tex., after attending the midyear meeting of the A.P.I. in Wichita, Kans., last week.

T. E. BUCHANAN, whose resignation as president of the Petroleum Navigation Company and the Intracoastal Towing & Transportation Company, Houston, Tex., was announced recently, has been appointed assistant to T. RIEBER, chairman of the board, the Texas Company, New York, and is moving to that city.

COL. HENRY L. DOHERTY, New York, president of Cities Service Company, was awarded the honorary degree of doctor of science Monday of this week by the University of Miami, Miami, Fla. The degree was conferred in absentia. MRS. DOHERTY, who was present, received the honorary degree of doctor of philanthropy. The degrees were conferred by DR. B. F. ASHE, president of the university. DR. ELMER V. HJORT, professor of chemistry, read a citation which said, "We choose today to honor Colonel Doherty as a man of science, and an original and energetic thinker and doer. By his own personal studies and researches he has added to our scientific knowledge of fuels and gases and their economic utilization. He was a pioneer in the fight to prevent the waste of our great resources of natural gas and petroleum. Because this man has lived, humanity's scientific horizon has been extended." MARY B. MERRITT, dean of women, in conferring the honor upon Mrs. Doherty, cited her "distinguished record as a student of music and literature."

HARRY M. RYDER was elected president of the Bradford District Pennsylvania Oil Producers Association at a recent meeting in Bradford. D. B. TANNER and R. S. PRINGLE, JR., were chosen vice presidents; HUGH GRANT, JR., secretary-and A. E. BOOTH, treasurer.

LLOYD WILLIAMSON, recently elected president of the Oil Producers Agency of California, has been placed in charge of five companies in which THOMAS A. O'DONNELL, former president of the American Petroleum Institute, is interested. Mr. Williamson, who has been with the California Star Oil Company for 24 years, and for 14 years as general manager, has been named executive head of O'Donnell Oil Securities, Lakeport Petroleum Company, Section One Oil Company and Circle Oil Company.

ROBERT M. FORBES will be in charge of the new marketing department established by the Carter-Waters Corporation, Kansas City, Mo. HARRY G. McKOWEN, who has been associated with Mr. Forbes, will be his assistant. The new department will handle the usual line of refined oil products.

DR. F. H. LAHEE, chief geologist of the Sun Oil Company, has confirmed a report that one of his crews was beginning geological explorations in Osceola County, Florida. Sun Oil Company has approximately 1,000,000 acres of land under lease in Florida, Dr. Lahee said. The leased lands are in scattered blocks. "I have not the slightest idea what the prospects are for discovery of oil in Osceola County or any other part of Florida," Dr. Lahee said. "That is why our exploratory crew is there."

Now is Chief Engineer

Just six years after he graduated from the University of Kansas with a bachelor of science in civil engineering S. Stanley Learned was placed in direct charge of design and construction of the $12,000,000 gasoline pipe line (pioneer of its kind) which the Phillips Petroleum Company built from Borger, Tex., to East St. Louis, Ill. So it's easy to understand how, with that sort of record, he has been moved up to chief engineer, to succeed A. H. Riney, recently elected vice president.

S. STANLEY LEARNED

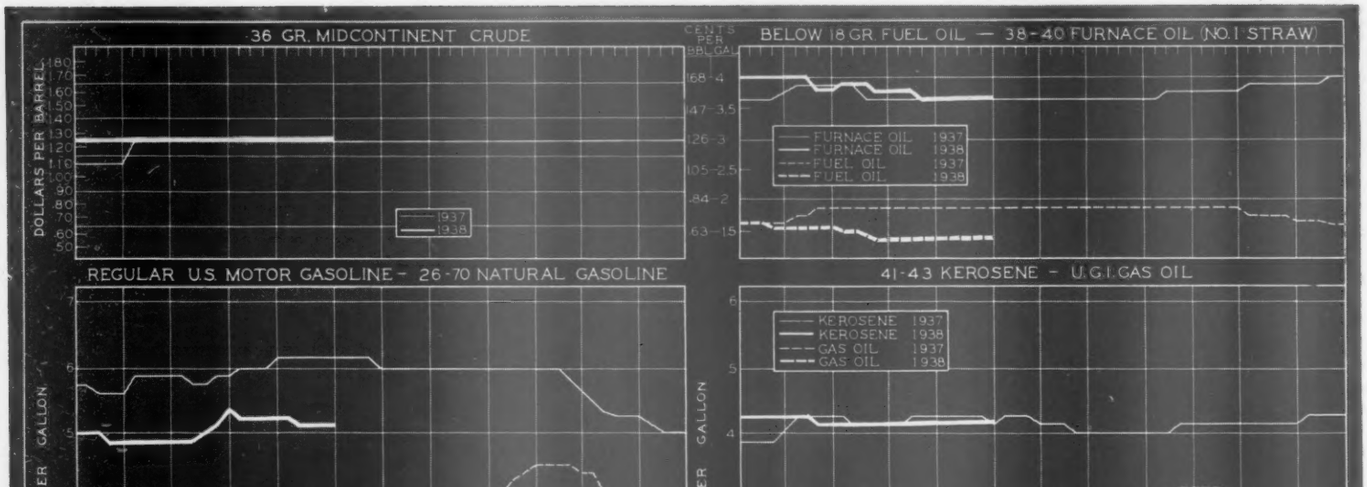
Mr. Learned has been with Phillips since he completed his university course in 1924, starting as chief of a field party determining the elevation of oil wells in various Oklahoma areas. After that he was geologist's instrumentman; draftsman; chief of field party doing preliminary work for natural gasoline plants; chief clerk in engineering department; overseeing land survey work in Texas Panhandle; making engineering economic studies on new and completed projects. In 1928 he directed design and construction of gasoline bulk stations and service stations, including ground surveys, layouts, specifications, contracts, and inspection. Then came the big gasoline line, which some folks said wouldn't work. (But it did.) That finished, Mr. Learned was made assistant engineer in charge of design and construction of pipe lines, gasoline plants, refineries, etc. In 1935 he became assistant chief engineer, which post he held till the advancement just announced.

O. E. BROWN, scout for the Salt Dome Oil Corporation in Houston, Tex., has been transferred to Corpus Christi, Tex., and will cover the lower Gulf Coast district.

A. T. RYNALSKI, assistant general superintendent of the Lago Petroleum Corporation's refinery at Aruba, has returned to the Dutch West Indies after a visit in New York and other eastern United States cities.

J. S. HEROLD, formerly with the Cities Service Oil Company as geologist at Odessa, Tex., has resigned to join the West Texas geological staff of the Shell Petroleum Company, with headquarters at Midland. E. H. WALKER, formerly with the Phelps Dodge Corporation, Bisbee, Ariz., also has joined Shell's geological staff in Midland.

W. S. HALLAHAN, president of the Plymouth Oil Company, Pittsburgh, Pa., headed a party of directors associated with the Benedum-Trees interests on a tour of inspection of the Gulf Coast and Southwest Texas districts the past week. D. W. HOVEY, vice president and general manager of the Republic Oil & Refining Company, and PAUL G. BENEDUM, president of the Bentex Oil Company, both of Houston, Tex., joined the party for the tour. Other members of the party were A. B. DALLY, JR., and D. D. JOHNSON, Hiawatha Oil & Gas Company; A. F. HOLLIDAY, WALTER A. JONES, W. E. HUSTON, W. M. GRIFFITH, JAMES TATUM, and H. B. DAVENPORT, Plymouth Oil Company; J. C. TREES, JOHN F. HARDY, C. A. FLOTO, EDWARD B. KELLY, DARWIN BENEDUM and CLAXTON BENEDUM, Benedum-Trees Oil Company; C. W. CAMPBELL, Republic Oil Refining Company; F. B. PARRIOTT and BRAXTON DAVENPORT, independent oil operators.



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Prices for Gasoline Must Rise Before Group 3 Market Can Look Right

By T. F. SMILEY

The thing needed to make the Group 3 gasoline market pleasant to look at this week was better prices, and hopeful ones predicted this lack was by way of being removed. Not a pint of distress material was visible. The whole Mid-Continent area was declared to be oversold. "I'm finding it almost impossible to get hold of any gasoline at published prices," declared the sales manager of one refinery which does not produce enough at its own plant to meet its customer requirements. Other sales managers told of similar situations.

Cheaper to Buy Than to Make It

An increasing number of major refiners are adopting the policy of buying gasoline from smaller operators instead of making it. The roll of idle refineries is testimony to the fact that at current prices for most refined products some plants cannot be operated at a profit. To avoid loss for themselves and at the same time to extend a friendly hand important companies are ascertaining where they can get gasoline of the high quality their trade demands and then keeping their own operations down to as low a point as possible, supplementing their output by purchases from refiners who, with a less burdensome overhead, are able to keep their plants running.

Notwithstanding adverse motoring conditions in many regions, spot buying was reported active, and contract movement was in steady volume. Most of the buying for the Memorial Day demand was completed early last week, but brisk ordering continued. Jobbers evidently believed the triple holiday would drain their supplies, and they were taking steps to have replacement material coming in early this week. Another motive was mentioned. It was a feeling that higher prices might have to be paid if ordering was delayed.

There was solid basis for the growing belief that this week is likely to prove a turning point in the gasoline market, for the impetus imparted by Memorial Day buying has been picked up by the demand regularly accompanying the arrival of June. This week witnessed a thickening of the stream of cars on main highways. Students were returning home from school. Families were starting on vacation tours. Pleasure driving was increasing. All of which means more business at the filling station.

Contributing further to the improved aspect of the gasoline market in the Group 3 area as well as elsewhere was the drop in the nation's crude oil stocks, which now are lower than they were at this time last year. No less encouraging was the substantial cut in crude production, well below the recommended allowable of the Bureau of Mines. Continued melting of the country's gasoline stocks was a cheering factor, but opinion was general that runs to stills should be cut more drastically.

Heating Oils Looking Up

Inquiries for heating oils appeared in increasing numbers this week, indicating quite definitely that ordering for fall storage is at hand. As a matter of fact there was fairly active buying of 32-36 straw- to amber-colored material, and something resembling scarcity developed. Any of this grade available at ruling prices was said to have been bought up promptly, for it usually is in heavy demand for domestic heating during the cold season. Jobbers who had been putting off buying till they felt sure prices had reached bottom are now exhibiting interest.

Natural gasoline presented little change. No distress stocks of serious size obtruded themselves, but anybody who wanted to buy had not the slightest difficulty in finding supplies, and manufacturers were watching eagerly for him. Apparently just enough material was being taken for storage to prevent troublesome accumulation.

Lubricants were dull, and price-cutting on large orders for export was reported. Heavy industrial fuel was increasingly loggy.

Refined Oil Market Barometer

There is general feeling that the present week will mark a turn for the better in the gasoline market. Heavy buying for Memorial Day was followed by brisk replacement ordering. Beginning of the vacation season is expected to carry demand to higher levels, with stiffening of prices. Substantial lowering of gasoline and crude stocks is contributing to an improved market tone.

MID-CONTINENT. Gasoline stronger. Naturals weak. Heating oils attracting interest.

EAST COAST. Gasoline consumption rising and market firmer. Fuel oils drifting lower.

GULF COAST. Fuel oils slightly brighter. Gasoline weak. Market sluggish.

CALIFORNIA. Quiet market prevails throughout the whole list of refined products.

PENNSYLVANIA. Gasoline demand up and prices slightly higher. Kerosene improved.

CHICAGO. Better tone in motor fuel market. Tractor fuels brisk. Kerosene holding.

Triple Holiday Boosts Gasoline Demand on Eastern Seaboard

By H. STANLEY NORMAN

NEW YORK, May 31.—The triple holiday week-end at the close of May, the first opportunity of the summer for extended motoring, boosted gasoline requirements along the eastern seaboard to a new high for 1938. Activity on the Gulf Coast, representing business for replacement of stocks consumed over Memorial Day, imparted a new firmness to the high octane gasoline market, although the price structure in general is unchanged from the preceding week.

Effective June 1, Standard Oil Co. (New Jersey) launched a new marketing policy in New Jersey by stipulating a minimum resale price for its branded motor fuel under contracts authorized by the state's fair trade law. The New Jersey gasoline market has been subjected to numerous disturbances during the past year and in many instances the margins available to dealers in meeting competitive conditions have been reduced to an absolute minimum.

Standard has specified a minimum of 15.3 cents per gallon, including taxes, as the retail price for its Essolene in New Jersey effective June 1. The company is offering its dealers a contract which will result in its price to undivided dealers becoming 12.1 cents per gallon, including tax, instead of 12.25 cents as at present. The price to divided dealers will be 12.6 cents per gallon, including the tax. "It is recognized that the above minimum retail price is subnormal and the contract that the Standard Oil Co. (New Jersey) is offering its dealers provides that the company shares 50-50 with its dealers the burden of such abnormal conditions," a statement reads.

Gasoline has been retailing in northern New Jersey at as low as 12.9 cents a gallon, including taxes.

Other leading marketers in New Jersey were withholding a decision on whether they will act under the state fair trade law in stipulating minimum prices. If some element of stability can be imparted to the New Jersey gasoline market through the medium of the fair trade law it is expected by observers, however, to receive the blessing and support of other large dealers.

Most of the retail disturbance in New York gasoline business had been corrected before the triple holiday week-end. With the tank-car and barge price stiffening in proportion to Gulf Coast conditions it appears that the remainder of summer may prove satisfactory. There are a few scattered sections of the metropolitan area in which 7 gallons of motor fuel may be obtained for $1, including state, federal and New York city sales taxes. This price is the rare exception, however, and a city-wide price collapse which threatened during the middle of May now seems remote.

A strike of 600 barge employes of oil transportation companies in New York harbor was settled in two or three days and caused no serious interruption of deliveries. Workers returned to their barges after gaining certain concessions in size of crews, hours of work and slight pay increases for oilers. Companies involved hastened to work out a reasonable settlement to avoid loss of business immediately preceding the week-end of heaviest consumption for the summer.

Fuel oil prices continue to drift lower at practically all points along the Atlantic seaboard. Standard Oil Co. of New Jersey lowered practically all fuel oil products another quarter of a cent per gallon at Baltimore last week following similar action at several other points during the preceding three weeks of May. With exception of No. 1 fuel oil which is quoted in tank cars at 5¼ cents per gallon at Baltimore all fuel oils are priced at 4¼ cents. No. 2 fuel oil in tank-wagons is being delivered to New York customers by some dealers at 5¾ cents per gallon. Heavy industrial fuel oil may be obtained in New York at 2¾ cents per gallon, although some dealers are holding their quotations for tank-wagon delivery at 3 cents or slightly higher.

Standard also reduced fuel oil prices at Norfolk, Charleston and Wilmington effective May 30. At Norfolk No. 1 fuel oil was lowered a half cent to 5¼ cents per gallon in tankcars and No. 2 and No. 4 fuel oil was reduced by a similar margin to 4¼ cents. Marine diesel oil was cut 24½ cents at Norfolk to a new price of $1.75 per barrel. At Wilmington and Charleston No. 1 fuel was cut a quarter of a cent to 5½ cents per gallon and the No. 2 and No. 4 grades were reduced to 4½ cents. Marine diesel at Wilmington and Charleston was lowered 10 cents to $1.85 per barrel.

Bunker C fuel oil is quoted at $1.05 per barrel by most suppliers in the North Atlantic coastal section and demand from the marine trade is reasonably satisfactory. Financial difficulties of several steamship line operators are working a hardship on the bunkering business either in volume or in the matter of collections.

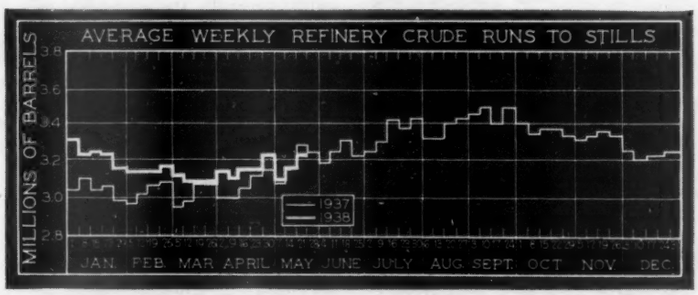
Export inquiry is again more active on the Gulf Coast, particularly for gasoline, since Rumanian stocks have been drawn upon heavily during the past four to six weeks by European buyers. Rumanian refiners have raised their prices to a parity with those existing on the Gulf Coast and this country is again in position to compete for European requirements. Four cargoes of 68-70 octane gasoline were reported purchased on the Gulf Coast last week for coastwise movement in June at 5½ cents per gallon. Some thought 70-octane gasoline still might be purchased on the Gulf Coast for 5⅝ cents, but inquiries among the suppliers indicated that 5½ cents is the minimum for motor fuel meeting all standard specifications. Revival of export interest extended to gas oils which are being held by a substantial portion of the Gulf Coast refiners at 3½ cents per gallon. Exporters believe the 3½-cent price can be bettered on firm bid, but there has been relatively little trading in the product in recent weeks, preventing an accurate gauge of the market.

Despite the unfavorable driving weather most of the large suppliers show increases in motor fuel volume this year over last. Some of the

(Continued on Page 128)

A. P. I. Weekly Refinery Statistics

Refinery figures for the week ended May 28 not available, due to Memorial Day holiday



Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATES)

Week ending May 21, 1938	302,597,000 barrels
Week ending May 14, 1938	304,198,000 barrels
Week ending May 22, 1937	307,033,000 barrels

Retail Oil Markets

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of May 31, 1938

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county and city taxes. The gasoline is the regular or standard grade. In most areas a third grade and a premium grade are also available.

Standard Oil Co. (Indiana)

	Gasoline			Kero.
	Tank wag.	Dir.	Inc. tax	tank-wag.
Chicago, Ill.	15.6	13.6	4.0	10.5
Decatur	15.6	14.1	4.0	10.5
Joliet	15.6	14.1	4.0	10.5
Peoria	15.6	14.1	4.0	10.5
Quincy	15.4	13.9	4.0	10.3
Davenport, Ia.	15.6	14.1	4.0	‡10.5
Des Moines	15.4	13.9	4.0	‡8.3
Mason City	15.8	14.3	4.0	‡10.7
Sioux City	15.6	14.1	4.0	‡10 5
Duluth, Minn.	17.4	15.9	5.0	11.3
Mankato	17.0	15.5	5.0	10.9
Minneapolis	17.0	15.5	5.0	10.9
LaCrosse, Wis.	17.0	15.5	5.0	10.9
Green Bay	17.4	15.9	5.0	10.3
Milwaukee	16.8	15.3	5.0	10.7
Detroit, Mich.	15.3	13.8	4.0	9.0
Grand Rapids	14.8	13.8	4.0	9.7
Saginaw	16.3	14.8	4.0	9.3
Evansville, Ind.	17.1	15.6	5.0	†11.0
Indianapolis	17.3	15.8	5.0	†11.2
South Bend	17.6	16.1	5.0	†9.4
Fargo, N. Dak.	17.2	15.7	4.0	12.1
Minot	18.5	17.0	4.0	13.4
Huron, S. Dak.	17.5	16.0	5.0	11.4
Kans. City, Mo.*	14.9	13.4	4.0	9.8
St. Louis*	15.2	13.7	4.0	8.0
St. Joseph*	14.9	13.4	4.0	9.8
Wichita Kans.	14.4	11.6	4.0	8.3

*State tax 2 cents, 1-cent city tax and 1-cent federal tax. †Does not include 4-cent state tax. ‡Does not include 3-cent state tax.

Exclusive of state general sales taxes.

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gallons or more, 1.5 cents off; minimum delivery 25 gallons.

Stanolex Fuel Oil in Chicago

Effective Dec. 7, 1936, f.o.b. Chicago tank-wagon prices: Range oil, 1-99 gallons, 8.8 cents; 100-149 gallons, 7.8 cents: 150 gallons and over, 7.3 cents. Stanolex No. 1. 1-99 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons and over. 7 cents. Stanolex furnace oil. 1-149 gallons. 7.8 cents; 150 gallons and over 7 cents; Stanolex A. 1-399 gallons. 5.75 cents; 400 gallons and over. 4.75 cents. Stanolex B. 1-799 gallons. 5.75 cents; 800 gallons and over. 4.75 cents

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline			Kero.
	Tank-wag. dlr.	Tank-car con'r.	Inc. tax	tank-wag.
Atl'tic. City, N. J.	12.75	11.25	4.0	8.0
Newark	12.75	11.25	4.0	8.0
Annapolis, Md.	14.85	13.35	5.0	9.5
Baltimore	14.25	12.75	5.0	9.0
Cumberland	16.65	14.15	5.0	10.0
Wash'g'n, D. C.	12.5	11.0	3.0	9.5
Danville, Va.	16.95	14.45	6.0	12.9
Norfolk	15.75	13.25	6.0	11.5
Petersburg	16.05	13.55	6.0	11.7
Richmond	16.05	13.55	6.0	11.7
Roanoke	17.25	14.75	6.0	12.9
Charles'n, W. V.	17.05	14.55	6.0	12.6
Parkersburg	15.35	13.85	6.0	11.2
Wheeling	16.25	14.85	6.0	12.2
Charlotte, N. C.	18.65	16.15	7.0	12.6
Hickory	19.15	16.65	7.0	13.0
Mt. Airy	18.95	16.45	7.0	12.8
Raleigh	18.25	15.75	7.0	12.1
Salisbury	18.75	16.25	7.0	12.7
Charleston, S. C.	17.25	14.75	7.0	11.1
Columbia	18.25	15.75	7.0	12.1
Spartanburg	18.95	16.45	7.0	12.9

Price basis to commercial consumers effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia: and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at time by hose connection, on yearly purchases: From 2,500 to 100,000 gallons, consumer tank-wagon price at time and place of delivery; 100,000 gallons per year, consumer tankcar price plus .5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less .5 cent per gallon.

Effective May 15, 1937, in North and South Carolina, West Virginia and Virginia (except Arlington and Fairfax counties): Commercial consumers taking deliveries of 50 gallons (W. Va., 100 gallons) or more at one time will be billed at posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons (W. Va., 100 gallons) will be billed at 4 cents per gallon over posted consumer tank-wagon price. Generally the posted consumer tank-wagon price will be the equivalent to the dealer price less .5 cent per gallon.

Discount for kerosene, 1 cent off tank-wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except no discount in New Jersey.

Southern District

STANDARD OIL CO. OF KENTUCKY

	Gasoline			Kero.
	Tank-wag.	Net dlr.	Inc. tax	tank-wag
Atlanta, Ga.	20.0	17.0	7.0	*12.0
Augusta	21.0	18.0	7.0	*14.0
Macon	21.0	18.0	7.0	*14.0
Savannah	19.5	16.5	7.0	*12.0
Birm'ham, Ala.	21.0	18.0	8.0	12.0
Mobile	21.0	18.0	9.0	11.0
Montgomery	21.0	19.0	9.0	13.0
Jackson, Miss.	19.5	16.5	7.0	*12.5
Vicksburg	19.5	16.5	7.0	*12.5
Jacks'ville, Fa.	22.5	17.5	8.0	11.0
Miami	20.5	17.5	8.0	11.0
Pensacola	22.0	19.0	9.0	12.0
Tampa	19.5	16.5	8.0	10.5
Lexington, Ky.	19.0	16.0	6.0	11.0
Covington	18.5	15.5	6.0	11.0
Louisville	19.0	16.0	6.0	10.5
Paducah	19.0	16.0	6.0	10.0

Price basis to tank-wagon consumers: Effective January 4, 1937, 3 cents per gallon below tank-wagon price. Kerosene prices in all states subject to 2 cents discount except in Kentucky where prices are net.

*Includes 1-cent state tax.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax; and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola has a city gasoline tax of 1 cent.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline		Kero.
	Dealer	Inc. tax	tank-wag
Denver, Colo.	14.0	5.0	11.5
Grand Junction	19.0	5.0	15.0
Pueblo	16.5	5.0	10.5
Casper, Wyo.	17.0	5.0	11.5
Chevenne	13.0	5.0	13.0
Butte, Mont.	19.5	6.0	15.5
Billings	19.5	6.0	13.0
Helena	19.5	6.0	15.5
Great Falls	19.5	6.0	15.5
Salt Lake City, Utah	18.0	5.0	16.0
Twin Falls, Ida.	21.0	6.0	18.0
Boise	21.5	6.0	18.0
Albuquerque, N. M.	17.5	*6.5	12.0

*Includes city tax of one-half cent.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline			
	Tank-wag. con'r.	Di-vided dlr.	Inc. tax	Kero. tank-wag.
Ohio points	16.5	15.5	5.0	*13.0

*Includes state tax of 1 cent

New York and New England

SOCONY-VACUUM OIL CO., INC

	Gasoline			Kero.
	Tank-wag.	Tank-car	Inc. tax	tank wag.
Albany, N. Y.	14.5	12.5	5.0	9.0
*Met. N. Y.:				
M'htt'n, Br'nx	14.0	12.5	5.0	8.75
Staten. Island	14.0	12.5	5.0	8.75
Q'ns & Bklyn.	14.0	12.5	5.0	8.75
Buffalo	14.0	13.0	5.0	7.5
Rochester	15.0	13.2	5.0	8.5
Syracuse	14.5	13.1	5.0	9.0
Boston, Mass.	13.5	11.75	4.0	8.5
Portland, Me.	15.0	13.0	5.0	8.75
Manch'ter, N.H.	15.5		5.0	9.0
Burlington, Vt.	15.4	13.4	5.0	9.5

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes. Metropolitan New York prices are undivided dealer prices; others are split dealer.

Price basis to undivided dealer: Posted dealer tank-wagon price less .5 cent. Price basis to commercial consumer: Effective Nov. 15, 1936, monthly purchases of 25,000 gallons and over, consumer tankcar prices at delivery point plus .5 cent per gallon: monthly purchases of 5,000 to 25,000 gallons, undivided dealer price at delivery point; monthly purchases under 5,000 gallons, pay divided dealer tank-wagon prices at delivery point.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline			Kero.
	Tank-wag.	Serv. sta.	Inc. tax	tank-wag.
San Francisco	17.5	18.5	4.0	11.5
Los Angeles	17.0	18.0	4.0	10.0
Fresno, Calif.	18.5	19.5	4.0	12.5
Phoenix, Ariz.	21.5	22.5	6.0	*17.5
Reno, Nev.	20.5	21.5	5.0	13.5
Portland, Ore.	20.0	21.0	6.0	13.5
Seattle, Wash.	20.0	21.0	6.0	13.5
Spokane	23.0	24.0	6.0	16.5
Tacoma	20.0	21.0	6.0	13.5

*Includes 5-cent state tax.

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents; to split dealers, 2 cents. To commercial consumers: on tank-wagon price: on single deliveries of 40 gallons and over, advance quantity discount extended at time of delivery, 3 cents. Service station schedule applies on single deliveries less than 40 gallons. On kerosene in tankcar, transport truck and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank-wagon.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline			Kero.
	Tank wag.	Dlr.	Inc. tax	tank-wag.
Omaha	18.0	16.5	6.0	10.8
McCook	17.5	15.0	6.0	9.5
Norfolk	18.4	16.9	6.0	10.3
North Platte	18.8	16.9	6.0	11.0
Scotts Bluff	19.5	16.5	6.0	12.3

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective Jan. 1, 1935.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline			Kero.
	Tank-wag. dlr.	Tank-car con'r.	Inc. tax	tank-wag.
N. Orleans, La.	19.0	16.5	*10.0	†12.0
Baton Rouge	17.0	14.5	8.0	12.0
Alexandria	17.5	15.0	8.0	10.5
Lafayette	18.0	15.5	8.0	12.5
Lake Charles	18.0	15.5	8.0	12.5
Shreveport	16.5	14.0	8.0	9.5
Kn'xv'lle, Tenn.	20.0	17.5	8.0	14.0
Memphis	18.0	15.5	8.0	12.0
Chattanooga	19.5	17.0	8.0	13.5
Nashville	19.0	16.5	8.0	10.5
Bristol	19.0	17.75	8.0	14.5

*Includes 2-cent parish tax. †Includes 1-cent parish tax and 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gallons or more in one delivery takes posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less .5 cent per gallon.

Louisiana kerosene prices include 1-cent state tax.

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO

	Gasoline			Kero.
	Tank-wag. dlr.	Tank-car con'r.	Inc. tax	tank-wag.
Philadelphia, Pa.	13.75	12.25	5.0	10.0
Pittsburgh	15.0	13.0	5.0	10.5
Allentown	14.25	12.75	5.0	10.5
Erie	14.5	13.0	5.0	10.0
Scranton	14.5	13.0	5.0	10.5
Altoona	15.0	13.0	5.0	10.5
Dover, Del.	13.5	....	5.0	10.5
Wilmington	13.5	....	5.0	10.5
Springf'd, Mass.	13.5	....	4.0	8.0
Worcester	14.0	....	4.0	8.5
Hartford, Conn.	13.6	....	4.0	7.5
New Haven	13.5	....	4.0	8.0
Providence, R. I.	13.0	....	4.0	8.0

Price basis to undivided dealers, dealer tank-wagon price less .5 cent per gallon Price basis to commercial consumers in Pennsylvania and Delaware, effective March 11, 1937: Consumers under contract using 100,000 gallons or more per year full compartment hose deliveries, tankcar plus .5 cent. Consumers under contract using less than 100,000 gallons per year compartment hose deliveries, undivided dealer price. Consumers under contract less than full compartment delivery, consumers not under contract, less than full compartment delivery, and consumers not under contract full compartment delivery, divided dealer price. Less than 25 gallons, tank-wagon delivery, 4 cents per gallon above undivided dealer price.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline		Kero.
	Dealer	Inc. tax	tank-wag.
Muskogee, Okla.	14.5	5.0	7.0
Oklahoma City	13.5	5.0	8.0
Tulsa	14.0	5.0	6.0
Ft. Smith, Ark.	14.25	5.0	7.5
Little Rock	16.75	7.5	8.0
Texarkana	14.0	5.0	8.5

Texas

	Gasoline			Kero.
	Tank-wag.	Serv. sta.	Inc. tax	tank-wag.
Dallas, Tex.	14.0	18.0	5.0	8.0
Fort Worth	14.0	18.0	5.0	8.0
Houston	14.5	19.0	5.0	8.0
San Antonio	13.5	17.5	5.0	8.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank-wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

*Prices include 3-cent Illinois tax, but not 1-cent federal tax or 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gallon lots if covered by contract.

Canada*

3-Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Tank-wag.	Inc. tax	Kero. tank-wag
Halifax, N. S.	24.5	10.0	18.5
St. John, N. B.	24.5	10.0	18.5
Montreal, Que.	21.0	6.0	17.5
Toronto, Ont.	22.0	6.0	17.0
Hamilton, Ont.	22.0	6.0	17.0
Winnipeg, Man.	27.5	7.0	20.7
Brandon, Man.	28.1	7.0	22.3
Regina, Sask.	27.0	7.0	22.0
Saskatoon, Sask.	29.8	7.0	24.9
Edmonton, Alta.	26.5	7.0	21.5
Calgary, Alta.	24.0	7.0	19.0
Vancouver, B. C.	23.0	7.0	23.0

*Imperial gallon used in Canada.

Divided dealers pay tank-wagon price. Discount to undivided dealers, 1 cent below tank-wagon price. In maritime provinces both divided and undivided dealers pay tank-wagon price.

Retail Price Changes

Standard Oil Co. (Indiana) May 16 reduced dealer gasoline .4 cent at Wichita; May 20 reduced tank-wagon kerosene 1 cent at Detroit.

Continental Oil Co. May 21 reduced tank-wagon kerosene .5 cent at Fort Smith and 1.5 cents at Little Rock; May 24 advanced dealer gasoline 3.5 cents at Pueblo.

New York Market

(Continued from Page 127)

gains are in terms of fractions of 1 per cent, but others have picked up 10 to 15 per cent, indicating that the average is probably clinging around 3 to 5 per cent. In view of the motoring season's particularly slow development in this large consuming section the gains in volume of motor fuel business are considered quite satisfactory. But for the sharp contraction in demand for fuel oils and lubricants in the industrial field the over-all demand picture would be encouraging. Demand for motor fuel and kerosene was also reported improved last week in the western Pennsylvania refining district. Most refiners elevated the top range of their motor fuel quotations an eighth of a cent per gallon. Lubricating oils were quiet and unchanged with most of the business in volume confined to interrefinery transactions.

Prices of Refined Products

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of May 31, 1938

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
62 oct. and below	.04¼	.04⅜
63-66 octane	.04½	.04⅝
67-69 octane	.04¾	.04⅞
70-72 octane (regular)	.05⅛	.05¼
60-62 400 grades:		
62 oct. and below	.04¼	.04⅜
63-66 octane	.04½	.04⅝
67-69 octane	.04¾	.04⅞
70-72 octane (regular)	.05⅛	.05¼
64-66 375	.04¾	.04⅞
68-70 360	.05	.05⅛

NORTH TEXAS—

U. S. Motor grades:		
62 octane and below	.04¼	.04⅜
63-66 octane	.04½	.04⅝
67-69 octane	.04¾	.04⅞
70-72 octane (regular)	.05⅛	.05¼
60-62 400	.04¼	.04⅜
64-66 375	.04¾	.04⅞

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

U. S. Motor grades:		
62 octane and below		.04⅛
63-66 octane	.04⅞	.05
67-69 octane	.05	.05⅛
70-72 octane (regular)	.05⅛	.05⅜

ARKANSAS (Ark., N. La., Miss. del.)—

U. S. Motor grades:		
62 octane and below	.04½	.04⅝
67-69 octane	.05	.05⅛
70-72 octane (regular)	.05½	.05⅝

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
62 octane and below	.04¼	.04⅜
63-66 octane	.04½	.04¾
67-69 octane	.04¾	.05
70-72 octane (regular)	.05	.05⅜
60-62 400 grades:		
62 octane and below	.04¼	.04⅜
63-66 octane	.04½	.04¾
67-69 octane	.04¾	.05
70-72 octane (regular)	.05	.05⅜
64-66 375	.04¾	.05
68-70 360	.05	.05¼

PENNSYLVANIA (inland refineries)—

58-60 U. S. Motor:		
Below 60 octane		.05¼
65 octane	.06½	.06⅝
68-70 octane	.07	.07¼

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.06¾	.08¼
58-60 400, 65 oct. and higher	.08½	.09¼

EAST COAST (domestic)—

U. S. Motor, 60-64.9 octane:		
New York (Bayonne)	.06¼	.06½
Philadelphia	.06¼	.06½
Boston	.06½	.06¾
Baltimore	.06½	.06¾
Charleston, S. C.	.07	.07¼
U. S. Motor, 65 and above:		
*New York (Bayonne)	.06½	.07
Philadelphia	.06½	.07
Boston	.06¾	.07
Baltimore	.07	.07¼
Charleston, S. C.	.07¼	.07½

*All grades of gasoline one-eighth to one-fourth cent less for barge shipments. New York harbor prices are for New York and New England delivery. Prices for New Jersey delivery one-fourth cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
Below 60 octane	.05	.05¼
60-64.9	.05¼	.05⅜
65 octane and higher	.05½	.05¾

Naphtha

PENNSYLVANIA (inland refineries)—

52-56 450 (blending)	.04¾	.05

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70	.02	.02¼
Grade 18-55	.02⅜	.02½

(Correction: Price of 26-70 in Oklahoma May 24, published as 2 to 2½, should have been 2 to 2⅛.)

NORTH TEXAS—

Grade 26-70		.02
Grade 18-55	.02⅜	.02½

CALIFORNIA—

75-85 375-390	.06½	.07

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

Grade 26-70		.02⅜

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 i.b.p., 110 flash, 540-550 e.p.	.04	.04½
41-43 gr., 300-520 i.b.p., 110-125 flash, 500-520 e.p.	.04⅛	.04¼
46-48 gr., 210-230 i.b.p., 480 max., e.p.	.04½	.04⅝

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.04½	.04¼
42-44	.04¼	.04⅜

NORTH TEXAS—

41-43	.04⅛	.04¼

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

41-43	.04⅛	.04⅜

ARKANSAS (Ark., N. La., Miss. del.)—

41-43	.04⅜	.04⅝

PENNSYLVANIA (inland refineries)—

45		.05
46		.05⅛
47		.05¼

CHICAGO (Based on Group 3)—

41-43	.04⅛	.04⅜
42-44	.04⅜	.04⅝

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.05	.06

NEW YORK (Bayonne, N. J.)—

41-43		.05¾

***GULF COAST (domestic)—**

41-43	.04⅛	.04⅜

*Barge price one-eighth cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

Range oil	.03⅞	.04
No. 1 prime white, 38-42	.03¾	.03⅞
No. 1 straw, 38-40	.03⅞	.03¾
No. 2 straw, 32-36	.03	.03⅛
No. 2 dark, 32-36	.02⅞	.03⅛
No. 3 zero to 15, 28-32	.02¾	.03
No. 3, 15 and above, 28-32	.02⅝	.02⅞

NORTH TEXAS—

No. 1 prime white, 38-42	.03¾	.03⅞
No. 1 straw, 38-40	.03⅝	.03¾

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

No. 2, 32-36	.03¼	.03½

ARKANSAS (Ark., N. La., Miss. del.)—

No. 2, 32-36	.03¼	.03½

CHICAGO (Based on Group 3)—

Range oil	.03⅞	.04⅛
No. 1 prime white, 38-40	.03¾	.04
No. 1 straw, 38-40	.03⅝	.03⅞
No. 2 straw, 32-36	.03⅜	.03⅝
No. 2 dark, 32-36	.03¼	.03⅜
No. 3, zero to 15, 28-32	.03¼	.03⅜
No. 3, 15 and above, 28-32	.02⅞	.03

NEW YORK (Bayonne, N. J.)—

*No. 1		.05¾
*No. 2		.04¾
*No. 4		.04¾

*Barge deliveries one-eighth to one-fourth cent under above tankcar price.

Gas Oil and Fuel Oil

(Gas oil per gal.; fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil	.02⅝	.02¾
No. 4, low cold test, 24-28	1.00	1.10
No. 4, 15 and above, 24-28	.85	.90
No. 5, low cold test, 18-22	.70	.75
Below 18 fuel oil, industrial	.55	.60

NORTH TEXAS—

U.G.I. gas oil	.02⅝	.02¾
No. 4, low cold test, 24-28	1.00	1.10
No. 5, low cold test, 18-22	.70	.75
Below 18 fuel oil, industrial	.55	.60

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

10-14 fuel oil, industrial	.80	.85

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02⅝	.02⅞
No. 4, low cold test, 24-28	1.00	1.10
No. 4, 15 and above, 24-28	.85	.95
No. 5, low cold test, 18-22	.70	.77½
No. 5, 15 and above, 18-22	.60	.70
No. 6, low cold test, 10-16	.60	.70
No. 6, 15 and above, 10-16	.35	.45

PENNSYLVANIA (inland refineries)—

36-40	.03⅜	.03⅞

CALIFORNIA—

Los Angeles:		
30-40 gas oil, per bbl.	1.25	1.50
24 plus diesel, per bbl.	1.20	1.50
24 plus diesel (bunkers)	1.30	1.55
12-16 (bunkers at tidewater)	.85	.90
10-16 (cargo lots)	.80	.90
12-17 (tankcars)	.60	.90
10-17 (high sulfur)	.55	.85
San Joaquin Valley:		
10-18 (tankcars)	.60	.80
24 plus diesel, per bbl.	1.30	1.50
San Francisco:		
24 plus diesel, per bbl.	1.45	1.55
24 plus diesel (bunkers)	1.50	1.55
10-16 (bunkers)		.95

GULF COAST—

No. 2 fuel		.03¼
43-47 diesel		.03½
48-52 diesel		.03½
53-57 diesel		.03⅝
Bunkers (bulk cargoes)	.72	.75
Bunker C (bunkers)		.80

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil		.04¾
28-30 diesel (lighterage 6¼c per bbl.)		1.85
28-30 diesel (tankers)	.04¾	.05
Bunker C (to ocean-going ships in N. Y. harbor)		1.05
Industrial fuel (tankcars)	.04	.04¼

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

190-200 D, 15-25		.19
150-160 D, 0-10	.14½	.16
150-160 D, 15-25	.13½	.15½
150-160 E, 15-25	.13	.15
100-110 D, 0-10		.14½
Steam refined:		
631 green (treated)		.13½
600 dark green (untreated)		.05

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):		
10 pour test	.15	.15½
15 pour test	.14	.14½
20 pour test	.13	.13½
25 pour test	.12	.12½
Steam refined:		
600	.08½	.09
650	.10½	.11½
600 Pennsylvania flash	.11	.13
630 flash	.14	.15
600 Warren E filtered	.13	.14

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

Zero to 10 Cold Test:		
150-3		.09
180-3		.10
180-4		.09½
200-3		.10½
200-4		.10
250-3		.11½
250-4		.11
280-3		.12½
280-4		.12
300-3½		.13
400-3½		.14
100-2½ paraffin oil		.06
15-20 Cold Test:		
200-3		.10
200-4		.09½
250-3		.11
250-4		.10½
280-3		.12
280-4		.11½

GULF COAST—

Pale Oils:		
200-3	.07	.07¼
300-3	.07½	.07¾
500-3½	.08½	.08¾
750-3½	.08⅝	.09¼
1,200-3½	.09½	.09¾
1,500-4	.09¾	.10
Red Oils:		
200-5-6	.07¼	.07½
300-5-6	.07¼	.07½
500-5-6	.08	.08½
750	.08¾	.09
1,200-5-6	.09¼	.09½

CALIFORNIA (moving to dom. market)—

Pale Oils:		
100-2½-3	.07¼	.08
200-2½-3	.07¼	.08
300-2½-3	.07¼	.08
400-3-4	.07¼	.08
450-3-4	.07¼	.08
550-3-4	.09	.11
600-3-4	.09	.11
Red Oils:		
200-4-5	.07¼	.08
300-5-6	.07¼	.08
350-5-6	.09¼	.11½
400-5-6	.09¼	.11½
450-5-6	.09¼	.11½
500-5-6	.09¼	.11½
600-5-6½	.09¼	.11½
700-6½ plus	.09¼	.11½
750-6½ plus	.09¼	.11½
900-6½ plus	.09¼	.11½

PENNSYLVANIA—

150 vis. at 70° F. color, 400-405 flash:		
Zero pour test	.15	.15½
10 pour test	.14	.14½
15 pour test	.13½	.14
25 pour test	.12½	.13
180 vis. at 70° F., 3 color:		
25 pour test	.14	.14½
200 vis. at 70° F., 3 color:		
Zero pour test	.16½	.17
10 pour test	.15½	.16
15 pour test	.15	.15½
25 pour test	.14	.14½

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (a.m.p.) w.c. scale	.02½	.02¼

PENNSYLVANIA (inland refineries)—

122-124 (a.m.p.) w.c. scale	.0180	.0190
124-126 (a.m.p.) w.c. scale	.0180	.0190

NEW YORK—

Wax in bags fully refined:		
122-125 (a.m.p.) wax		.0420
125-127 (a.m.p.) wax		.0435
128-130 (a.m.p.) wax		.0445
130-132 (a.m.p.) wax		.0455
133-135 (a.m.p.) wax		.0500
135-137 (a.m.p.) wax		.0515
124-126 (a.m.p.) w.s.		.0185
124-126 (a.m.p.) y.s.		.0185
Petrolatum in barrels, carload lots:		
Dark green	.02	.02½
Amber	.02⅜	.02½
Extra amber	.02⅝	.02¾
Lily white	.05½	.05¾
Snow white	.06½	.06¾
Cream	.04½	.04¾

Export Prices

GASOLINE

GULF COAST—

U. S. Motor	.04⅞	.05
60-62 400	.04⅞	.05
61-63 390	.05	.05¼
64-66 375	.05	.05⅛

LOS ANGELES—

U. S. Motor grades:		
55-65 octane	.05¼	.05½
65-69 octane		.05¾
Above 69 octane		.06¼

KEROSENE

GULF COAST—

41-43 prime white	.04½	.04⅜
41-43 water white	.04¼	.04⅜

LOS ANGELES—

41-43 water white	.05	.05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.a.s. in bbls.)—

Cylinder Stocks:		
600 Warren E	.14½	.15
600 S.R. unfiltered	.15½	.16
630 S.R. unfiltered	.17½	.18
600 flash, S.R.	.17½	.18
630 flash, S.R.	.21	.21½
Bright Stocks:		
8 color	.21½	.22
6½ plus color in dilution		.21

NEUTRAL OIL

200-3 color	.23½	.24
150-3 color	.21½	.22

PARAFFIN WAX

NEW YORK (prices per pound)—

123-126 a.m.p.		.0375
125-127 a.m.p.		.0387
128-130 a.m.p.		.0412
133-135 a.m.p.		.0437
135-137 a.m.p.		.0455
Crude Scale:		
124-126 w.s.	.0185	.0200
124-126 y.s.	.0185	.0200

Crude Oil Prices

Oklahoma, Kansas, North Central and East Central Texas

(Effective January 28, 1937)

East Texas (May 22, 1937)*	$1.35
Van, Tex.†	1.10
Camp Hill, Tex.	1.27
Cass County, Tex.‡	1.25
Talco	.73
Altus and Tipton, Okla.§	1.20
Other fields (see gravity table).	

*All companies. †Humble Oil & Refining Co.; Pure Oil Co. ‡Texas Co. §Gulf Oil Co. Talco by Humble Oil & Refining Co.

North Louisiana and Arkansas

Smackover, all grades	$ .90
Tullos and Urania	1.02
El Dorado East field	.90
Union County, Ark.	.90
Ouachita County, Ark.	.90
Lisbon, La. (Dec. 13, 1937)*	.98

*Caddo Crude Oil Purchasing Co.

Gulf Coast

(Effective January 28, 1937)

Choctaw and Darrow, La. See note below	
Clay Creek, Tex.	$1.00
Garden Island, La.	1.37
Cleveland, Tex.	1.27
Hardin, Tex.	1.15
Lafitte, La.	1.24
Livingston, Tex.	1.27
Welsh, La.	.98
Tepetate (La.) (Jan. 28, 1937)	1.24

Duval, Jim Hogg, Webb and Zapata counties, Texas, and Heyser and Placedo fields take Mirando gravity prices. Jennings, La., 5 cents lower than Gulf Coast prices on each degree. Segno, Texas, takes Gulf Refining Co.'s Gulf Coast prices. Choctaw and Darrow, Louisiana, posted for first time by Standard Oil Co. of Louisiana, start below 21 degrees at 90 cents, with 3-cent differential up to 25 gravity, then 2-cent differential up to 40 and above, $1.36. Effective October 1, 1937, Stanolind Oil & Gas Co. in Evangeline, La., pays 92 cents for below 20 gravity, adding 2 cents for each degree upward to 40 and over, at $1.34.

Rocky Mountain States

(Effective January 28, 1937)

Iles, Colo., light*	$1.18
Iles, Colo., heavy*	1.12
Greybull, Wyo.*	1.30
Torchlight, Wyo.*	1.30
Grass Creek, Wyo., light*†	1.30
Grass Creek, Wyo., heavy (May 1, 1938)*	.50
Hamilton Dome, Wyo. (May 1, 1938)*	.45
Elk Basin, Wyo., light*†	1.30
Frannie, Wyo., heavy*	.62
Frannie, Wyo., light (May 1, 1938)*	.65
Hogback, N. M. (Jan. 28, 1937)*	1.33
Salt Creek, Dutton Creek and Midway, Wyo., take Stanolind's Oklahoma prices on a gravity basis.	
Big Muddy, Wyo.†‡	1.23
Rock Creek, Wyo.†	1.20½
Lea County, N. M. (see West Texas gravity table).	
Artesia, N. M. (Jan. 2, 1937)‡	.90
Maljamar, N. M. (Jan. 28,1937)‡	.90
Canon City and Florence, Colo.	1.10
Lance Creek, Wyo.*	.97
Lander, Wyo. (Jan. 1, 1938)§	.51½
Sunburst, Mont. (Nov. 16, 1937)†	.90
Cat Creek, Mont. (Jan. 1, 1938)‡	$1.30
Garland, Wyo. (Jan. 1, 1937)†	.50

*Stanolind Oil & Gas Co. †Ohio Oil Co. ‡Continental Oil Co. Texas Co. (April 1, 1938). §Hudson Oil Co.

Middle Western States

OHIO OIL CO.
(Effective January 28, 1937)

Lima	$1.00
Illinois	1.35
Princeton, Ind.	1.35
Midland, Mich. (Jan. 5, 1938)*	1.12
West Branch, Mich. (Dec. 29, 1937)†	.80
Buckeye (Jan. 8, 1938)	1.09½
Arenac, Mich. (Dec. 29, 1937)†	.80
Muskegon, Mich.	1.00
Eastern Kentucky:	
Big Sandy River	1.42
Kentucky River	1.50
Western Kentucky	1.40

*Posted by Pure Oil Co.
†McClanahan P. L. and Simrall.
Midland, Mich., price posted by Simrall Corp. and Pure Oil Co. includes Greendale, Porter, Beaverton, Crystal and equal grades. West Branch and Arenac by Simrall Corp. Eastern Kentucky crude purchased by Ashland Refining Co., Ashland, Ky. Buckeye posted by Simrall Corp. and Pure Oil Co.

West Texas

See gravity table.	
Pecos County*	$ .91
Pecos shallow†	.81

*Shell Petroleum Corp., Gulf Pipe Line Co. and Humble Oil & Refining Co. †Shell Petroleum Corp.

Southwest Texas

(Effective January 28, 1937)

Pettus	$1.37
Salt Flat, Darst Creek, Hilbig, Carroll, Clark, Zoboroski	1.09
Lytton Springs	1.12
Luling	1.00

Saxet and Taft take same gravity table as Gulf Coast.

Eastern States

TIDE WATER ASSOCIATED OIL CO.
(Effective March 7, 1938)

Bradford, Pa.	$2.05
Allegany, N. Y.	2.05

SOUTH PENN OIL CO.
(Effective March 7, 1938)

Pennsylvania Grade Oil in National Transit Lines (Bradford field)	2.05
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	1.71
Pennsylvania Grade Oil in Eureka Pipe Line lines	1.65
Pennsylvania Grade Oil in Buckeye Pipe Line lines	1.55
Corning Grade Oil in Buckeye Pipe Line Co.'s lines	1.27

PENNZOIL CO.
(Effective March 7, 1938)

Pennsylvania Grade Oil in National Transit Lines:	
Group A	1.98
Includes, Cochran, Franklin, Hamilton and Doolittle districts.	
Group B	1.97
Includes Tidioute district.	
Group C	1.96
Includes Turkey and Tidioute districts.	
Group D	1.98
Includes Bear Creek and Porkey districts.	
Group E	1.93
Includes Eldeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredlin, McJunkin, Jameson, Kenerdell, Emlenton, Tiona, Lacey and Kinzua districts.	

PURE OIL CO.
(Effective March 7, 1938)

Cabin Creek, W. Va.	$1.88
Bradford Hollow, W. Va.	1.68
Kelly Creek, W. Va.	1.68

Canada

Ontario (Sept. 9, 1933)*

Petrolia	$2.10
Oil Springs	2.17

TURNER VALLEY NAPHTHAS AND CRUDE OIL
(January 5, 1938, by Imperial Oil, Ltd.)

Clear naphtha and discolored naphtha, 65 gravity and higher	$2.14
Discolored naphtha and crude oil, 40-40.9 gravity	1.14
Increasing 2 cents for each degree gravity with top price for 64-64.9 gravity	1.62

These prices f.o.b. producers field tankage.

*Imperial Oil, Ltd.

Crude Oil Price Changes

The Owensboro Pipe Line Co. posted a 10-cent reduction in the price of crude oil in Centralia, Ill., making the new price $1.25 per barrel effective May 25. At the same time it increased its pipe line runs to 40 bbls. per well per day.

Crude Prices by Gravities

	Oklahoma-Kansas	Oklahoma-Kansas	North and Central Texas	East Central Texas (Mexia district)	North Louisiana-Arkansas	Gray County, Texas	Hutchinson-Carson counties, Texas	Rodessa, Louisiana-Texas and Panola County, Texas	Conroe, Tomball, Raccoon Bend, (Deep) Satsuma	Gulf Coast	Gulf Coast	Lea County, N. Mex West Texas except Pecos County	Mirando district, Texas	Marion County, Texas	Refugio, Greta, Saxet, Taft, Texas	Anahuac, Flour Bluff, Dickson, Turtle Bay	White Castle, Louisiana	Iowa, Louisiana	Cayuga, Texas
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Bel. 18	....	....	....	....	....	....	....	....	....	$.95	....	....	....	....	....	....	....	$.90	....
18-18.9	....	....	....	....	....	....	....	....	....	.95	....	....	....	....	....	....	....	.92	....
19-19.9	....	....	....	....	....	....	....	....	....	.95	....	....	....	....	....	....	$.94	.94	....
20-20.9	....	....	....	....	....	....	....	....	....	.95	$.95	....	$.96	....	$1.01	....	.96	.96	....
21-21.9	....	....	....	....	....	....	....	....	....	.98	.98	....	.98	....	1.03	....	.98	98	....
22-22.9	....	....	....	....	....	....	....	....	....	1.01	1.01	....	1.00	....	1.05	....	1.01	1 01	....
23-23.9	....	....	....	....	....	....	....	....	....	1.04	1.04	....	1.02	....	1.07	....	1 04	1 04	....
24-24.9	....	....	....	....	....	....	....	....	....	1.07	1.07	....	1.04	....	1.09	....	1.07	1.07	....
Bel. 25	....	$.98	....	....	$.90	....	....	$.93	....	....	....	....	....	$.90	....	....	....	....	$.88
25-25.9	....	1.00	....	....	.92	....	....	.95	....	1.10	1.10	$.78	1.06	.92	1.11	....	1.10	1.10	.90
26-26.9	....	1.02	....	....	.94	....	....	.97	....	1.13	1.13	.80	1.08	.94	1.13	....	1.13	1.13	.92
27-27.9	....	1.04	....	....	.96	....	....	.99	....	1.15	1.15	.82	1.10	.96	1.15	....	1.15	1.15	.94
28-28.9	....	1.06	....	....	.98	....	....	1.01	....	1.17	1.17	.84	1.12	.98	1.17	....	1.17	1.17	.96
Bel.29	$1.06	....	$.96	$1.03	....	....	....	....	$1.20	....	....	....	....	....	....	....	....	....	....
29-29.9	1.08	1.08	.98	1.05	1.00	....	....	1.03	1.22	1.19	1.19	.86	1.14	1.00	1.19	....	1.19	1.19	.98
30-30.9	1.10	1.10	1.00	1.07	1.02	....	....	1.05	1.24	1.21	1.21	.88	1.16	1.02	1.21	$1.16	1.21	1.21	1.00
31-31.9	1.12	1.12	1.02	1.09	1.04	....	....	1.07	1.26	1.23	1.23	.90	1.18	1.04	1.23	1.18	1.23	1.23	1.02
32-32.9	1.14	1.14	1.04	1.11	1.06	....	....	1.09	1.28	1.25	1.25	.92	1.20	1.06	1.25	1.20	1.25	1.25	1.04
33-33.9	1.16	1.16	1.06	1.13	1.08	....	....	1.11	1.30	1.27	1.27	.94	1.22	1.08	1.27	1.22	1.27	1.27	1.06
34-34.9	1.18	1.18	1.08	1.15	1.10	....	....	1.13	1.32	1.29	1.29	.96	1.24	1.10	1.29	1.24	1.29	1.29	1.08
Bel. 35	....	....	....	....	....	$.96	$.91	....	....	....	....	....	....	....	....	....	....	....	....
35-35.9	1.20	1.20	1.10	1.17	1.12	.98	.93	1.15	1.34	....	1.31	.98	1.26	1.12	1.31	1.26	1.29	1.29	....
36-36.9	1.22	1.22	1.12	1.19	1.14	1.00	.95	1.17	1.36	....	1.33	1.00	1.28	1.14	1.33	1.28	1.29	1.29	....
37-37.9	1.24	1.24	1.14	1.21	1.16	1.02	.97	1.19	1.38	....	1.35	1.02	1.30	1.16	1.35	1.30	1.29	1.29	....
38-38.9	1.26	1.26	1.16	1.23	1.18	1.04	.99	1.21	1.40	....	1.37	1.04	1.32	1.18	1.37	1.32	1.29	1.29	....
39-39.9	1.28	1.28	1.18	1.25	1.20	1.06	1.01	1.23	1.42	....	1.39	1.06	1.34	1.20	1.39	1.34	1.29	1.29	....
40,over	1.30	1.30	1.20	1.27	1.22	1.08	1.03	1.25	1.44	....	1.41	1.08	1.36	1.22	1.41	1.36	1.29	1.29	....

Column 1—Companies posting are Barnsdall, Bell, Champlin, Continental, Cushing, Derby, Bay, Eason, El Dorado, Cities Service, Falcon, Globe, Gulf, Johnson, National, Phillips, White Eagle, Stanolind, Sunray, Texas, Sun, Vickers and Wilcox.
Column 2—Anderson & Prichard, Carter, Cosco, Deep Rock, Magnolia, Mid-Continent, Pure, Rock Island, Shell, Sinclair, Skelly and Tide Water.
Column 3—All purchasers.
Column 4—Humble Oil & Refining Co. and Sinclair Oil Purchasing Co.
Columns 5, 6, 7 and 8—All purchasers.
Column 9—Humble Oil & Refining Co. and Sun Oil Co. Tide Water Oil Co.'s schedule starts at 35 degrees, $1.34 with 2-cent spread up to 40 and over at $1.44. (Raccoon Bend prices are for deep sand oil.)
Column 10—The Texas Co. (Gulf Refining Co. pays same prices up to and including 34 gravity, but continues its 2-cent spread up to 40 and over at $1.41.)
Column 11—Humble Oil & Refining Co., Sinclair Prairie Oil Marketing Co., Sun Oil Co.
Column 12—All purchasers.
Column 13—All purchasers (effective July 6, 1937).
Column 14—Magnolia Petroleum Co.
Column 15—Humble Oil & Refining Co. (effective July 6, 1937).
Column 16—Humble Oil & Refining Co.
Columns 17 and 18—Shell Petroleum Corp.
Column 19—Tide Water Oil Co.

Rocky Mountain Runs

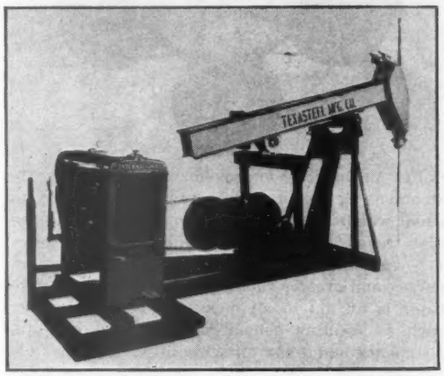
Production estimates for week ended May 28, 1938:

	Bbls.
WYOMING	
Salt Creek	15,770
Big Muddy	1,270
Badger Basin	150
Black Mountain	150
Byron	20
Dallas Derby	590
Dutton Creek	50
Elk Basin	30
Frannie	2,570
Garland	2,930
Grass Creek	2,480
Hidden dome	140
Hudson	290
LaBarge	1,090
Lance Creek	13,390
Lost Soldier	1,450
Medicine Bow	3,110
Midway	30
Oregon Basin	2,050
Osage	950
Pilot Butte	20
Quealy dome	760
Rock River	220
South Casper	450
Spindletop	40
Poison Spider	280
Teapot	20
Warm Springs	110
Wertz	1,330
Total Wyoming	51,740
MONTANA	
Cat Creek	620
Cut Bank	7,410
Dry Creek	1,390
Kevin-Sunburst	3,200
Pondera	660
Total Montana	13,280
COLORADO	
Florence	180
Fort Collins and Wellington	260
Iles dome	2,360
Moffat	370
Orchard	40
Rangely	80
Tow Creek	190
Price	450
Total Colorado	3,930
NEW MEXICO	
Cooper	4,360
Eaves	790
Eunice	22,010
Hardy	1,670
Hobbs	11,970
Jal	980
Langlie	3,300
Lynch	500
Lynn	730
Mattix	2,500
Monument	23,200
North Lynch	40
Penrose	4,320
Rhoades	80
Skelly	1,580
South Eunice	2,860
Vacuum	1,460
Artesia-Maljamar	5,110
Getty	170
Hogback	170
Rattlesnake	760
Total New Mexico	88,560
Total Rocky Mountain region	157,510

New or Improved Equipment

Texasteel Offers Pumping Unit Designed for Shallow Fields

The No. 6 PB twin-crank pumping unit introduced by Texasteel Manufacturing Co., Fort Worth, Tex., is designed for shallow-well pumping. It has a capacity of 8,000 pounds polished-rod load. The unit is recommended by the manufacturers for all shallow fields where economical pumping is a factor. It is designed along the lines of the company's heavier types for deep-well pumping. All the latest improvements are said to have been incorporated, including a remote brake-control assembly. The unit is also manufactured to be equipped with either electric control equipment or multicylinder engine drives. Several of these units are in operation in the West Texas and Southwest Texas oil fields pumping wells to depths of 2,800 feet.



Clint Walker Head of Division

Clint Walker has been named divisional manager for the H. C. Smith Tool Co. of Texas, and he will be in charge of offices opened by the company in Wichita Falls, Tex., according to an announcement made by R. C. Smith, vice president and sales manager. Mr. Walker's headquarters will be in the new Wichita Falls offices at 714 Hamilton Building. A complete line of H. C. Smith rock-bits and hole-openers will be readily available, not only in the K.M.A. field nearby, but throughout the entire Mid-Continent territory.

Bulletins, Booklets and Other Literature for the Trade

A 44-page booklet announced by Ingersoll-Rand, 11 Broadway, New York, is devoted to Calyx core-drills. There are numerous illustrations, including field scenes.

Two new bulletins are being distributed by Oil Well Supply Co. One is on "Oilwell" cable-tool drilling units and the other on "Oilwell" packers.

"We Raised Our Power Factor and Save $900 a Year," has been reprinted from Factory Management and Maintenance by the Electric Controller & Manufacturing Co., 2700 East Seventy-ninth Street, Cleveland, Ohio, in the form of a 24-page booklet, one copy of which is sent free. The article was written by Harry L. Wilcox, assistant chief engineer of the company.

Operators of diesel engines will be interested in an attractive booklet of 24 pages offered by the Sharples Specialty Co., Twenty-third and Westmoreland Streets, Philadelphia, Pa., on economical clarification of fuel oil and safe purification of lubricating oil.

A 44-page booklet released by Mason-Neilan Regulator Co., Boston, Mass., describes pressure recorders and recording and indicating thermometers. It is profusely illustrated and contains much data to aid in the selection of the proper instrument.

The current number of the Wheatley Pumper, published by Wheatley Bros. Pump & Valve Manufacturers, Tulsa, contains a description of the Mahavast indicating device, which indicates the liquid level of a tank at a point distant from the tank.

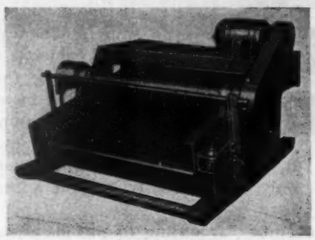
Technical details of the functions and construction of the V-belt are described simply and clearly in a four-page bulletin on Condor whipcord V-belts distributed by the Manhattan Rubber Manufacturing Division of Raybestos-Manhattan, Inc., Passaic, N. J.

Reed Roller Bit Co., Houston, Tex., announces two bulletins, one on the Reed back-pressure valve and one on the company's new double streamline tooljoint.

Wickwire Spencer Steel Co., 41 East Forty-second Street, New York, announces publication of a new chain link fence catalog. This 50-page booklet contains over 60 photographs of fence.

Mud-Screen of Unusual Design in Improved Shale-Shaker

The "44" shale-shaker, introduced by Allis-Chalmers Manufacturing Co., Milwaukee, Wis., is a complete unit consisting of a welded steel frame into which is incorporated a set of supporting skids, a mud-box into which the screened mud is delivered, and a screen member of unusual design. This machine is ready to set in place. All it is necessary for the operator to do is to bolt it to the trough leading from the discharge of the drilling equipment and connect the motor.



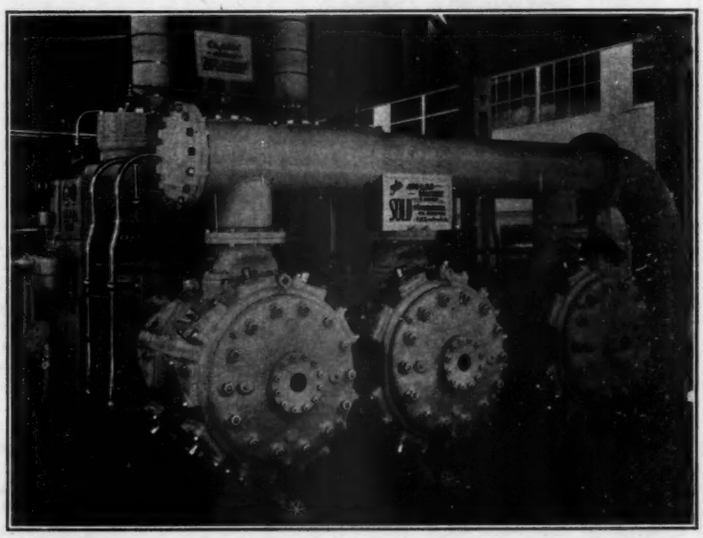
The surface of the cloth is crowned lengthwise of the screen and is horizontal across the entire width of screen. This means an even load over the entire width. By crowning the screen lengthwise a variable angle of inclination is made possible. In this way the feed end of the screen, which receives the liquid mud at considerable velocity, slows it up sufficiently for efficient screening. The increasing slope toward the discharge end carries the oversize particles quickly over the end of the screen into the shale-pit.

The screen cloth is made of two duplicate pieces of stainless steel, each 2 by 4 feet, and is supported by rubber-covered cross members and rubber-covered longitudinal members at center and both edges. This gives nearly 100 per cent effective width of screen. Area of screen is 16 square feet. There can be no leakage of unscreened mud into the mud-box.

IMPORTANT SALES CLOSED BY CLARK AT EXPOSITION

Clark Brothers Co., of Olean, N. Y., has reported important sales of equipment at the recent International Petroleum Exposition in Tulsa. The 400-horsepower "Super-2-Angle" compressor, which was the main feature of the Clark exhibit, was sold, along with four additional identical units, to the Continental Oil Co. to constitute the compressor installation at Continental's new gasoline plant in the K.M.A. field, near Wichita Falls, Tex.

Clark Brothers also sold the complete water-flooding unit it had on display to the Alluwe Oil Corp. for water-flooding service in Rogers County, Oklahoma. This unit consisted of a Clark "Bobcat" vertical engine and a Clark Triplex pump. Clark Brothers' total sales at the exposition amounted to approximately $110,000.



Pump Surges in Oil Pipe Line Absorbed by Safety Device

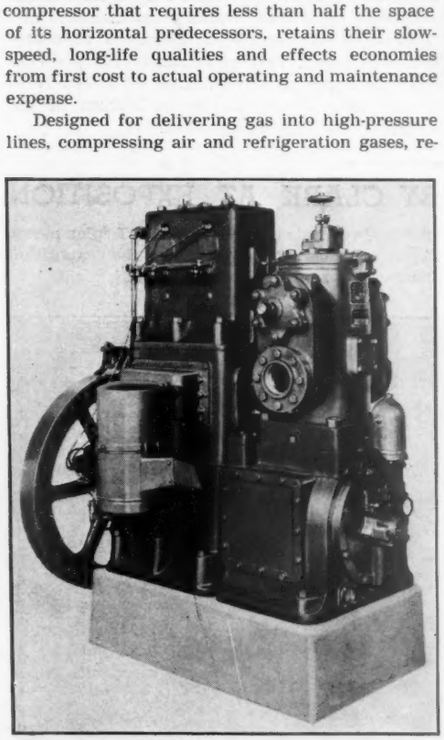
The new safety surge-chamber announced by Mid-Continent Supply Co., Fort Worth, Tex., is designed for use on oil pipe lines to absorb pump surges. Only 100 pounds of air is used to cushion the 700 pounds of fluid pressure carried in the line and to eliminate the hazards and cost of maintaining a high-pressure air system. The air in the chamber does not come in contact with the fluid at any time. The principle of design is the same as that used in balloon tires for automobiles — low-pressure cushion. It is necessary to replace air over long intervals only as the air is held in a separate chamber.

The chamber, according to the manufacturer, offers these special features: It is automatic, requiring no attention when shutting down or starting up pumps. It is safe. Oil and air do not come in contact. It is economical, with no high-pressure air system to maintain and no intricate parts. It is durable, made to withstand severe shocks. It is dependable, eliminating fire hazards.

Cooper-Bessemer Compressor Improves on Predecessors

The new Type G-MS compressor unit, announced by the Cooper-Bessemer Corp., Mount Vernon, Ohio, is a combination of the Type G-SD vertical pumping engine and a vertical compressor cylinder. Merged with the advantages of the G-SD vertical engine are those of a 40- to 50-horsepower compressor that requires less than half the space of its horizontal predecessors, retains their slow-speed, long-life qualities and effects economies from first cost to actual operating and maintenance expense.

Designed for delivering gas into high-pressure lines, compressing air and refrigeration gases, re-



pressuring oil sands and for natural gasoline extraction in small plants, the Type G-MS compressor is light-weight, rugged, and extremely compact. Easily transported, requiring a minimum amount of floor space and housing, and convertible for oil or gas fuel, the compressor can be arranged for two-stage operation through the addition of a second compressor cylinder mounted horizontally on either side of the compressor base.

The engine is a crosshead type with tapered roller bearings for its main shaft and is fully pressure lubricated. Its crankpin bearings are precision removable shells, and wristpins are the patented T type, providing greater bearing surfaces than usual. Crosshead-pin bearings are removable bronze bushings.

The vertical compressor, bolted to the drive end of a standard G-SD engine and using the same bolt circle provided for the engine clutch housing, becomes an integral part of the power unit, its sturdy crankshaft supported at the outer end by a radial type roller bearing. The single-acting compressor cylinders can be arranged for either single- or two-stage compression, by using a vertical and horizontal combination.

Correction

Through an error it was stated in the American Cast Iron Pipe Co. advertisement in the May 12 issue of The Oil and Gas Journal that Mono-Cast Doublex Simplex Pipe was suitable for operating pressure of "100 lbs. liquid." This statement should have read "1,000 lbs. liquid."

GASO ENTERTAINS OIL MEN

Mike J. Flanagan, L. D. Armstrong, and Tommy J. Flanagan, officials of the Gaso Pump & Burner Manufacturing Co., Tulsa, were hosts to 4,000 oil men May 18 at Shamrock Lodge, near Tulsa. Roast buffalo and elk formed the principal items on the menu.

New Model Weight-Indicator Is Strong and Simple Machine

Efficiency and utility have been increased in the new measuring-line weight-indicator announced by Martin-Decker Corp., Long Beach,

Calif. Mechanical improvements make this instrument simpler and stronger. The sensitivity to small weight changes has been increased and the dial travel has been lengthened to 540 degrees (1½ revolutions) to give maximum reading accuracy and greater capacity. The new weight-indicator is an aid to all measuring-line operations, such as locating cement-plugs and running instruments and tools on wire lines.

Important Features Claimed for New Sullivan Core-Bit

The Sullivan Machinery Co., Michigan City, Ind., is introducing a new type of core drilling bit known as the Koebelite Korbit. Faster drilling speed and greater footage per bit are claimed along with lower bit cost per foot of hole drilled. Koebelite Korbits consist essentially of bortz-bearing inserts accurately located and firmly brazed into radial slots in the face of the bit blank.

By means of a process developed and patented by C. J. Koebel, of Detroit, Mich., the stone-bearing insert or metal matrix, and the stones, are molded and bonded together. Even temperature changes cannot affect this bond. Because the stones are set in the inserts with mechanical precision and in accordance with a definite field-proven pattern and because the inserts are located with close limit gauges, uniform contour gauge is achieved which gives maximum cutting speed and is said to insure straighter hole. The bits are available in any style and size.

MUSKOGEE IRON WORKS IN PUMPING EQUIPMENT FIELD

Muskogee Iron Works, Muskogee, Okla., steel fabricator and derrick manufacturer, announces its M.I.W. line of double-reduction twin-crank pumping units, made in six structural sizes and eight sizes of gearboxes. The polish-rod load capacities range from 10,000 to 27,500 pounds. The double-reduction herringbone-gear units have capacities from 10 to 50 horsepower.

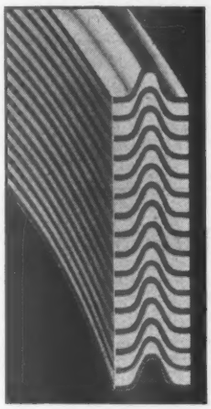
One of the distinctive advantages claimed is the interchangeable feature. Several sizes of gearboxes can be used with each size of structural, allowing selection of a combination particularly adapted for the prevailing well conditions. If the well conditions change, it is possible to replace the gearbox and engine with a more suitable size. The interchangeable feature allows the maximum protection with minimum cost.

The units are designed with liberal factors of safety. All plain bearings are designed with allowable bearing pressures as specified by the A.P.I. The selfaligning S.K.F. wristpin-bearings are selected for a life of approximately 10 years. All parts are built with welding and drilling jigs. The complete unit is assembled and run in before it is shipped from the factory.

The pumping equipment bulletin P-1, recently released, gives specifications and capacities of the various combinations in detail. Specific recommendations and installation prints are available.

Resilience, Durability United in Azor Flexiwound Gasket

A spirally wound metal-asbestos gasket of improved construction is being introduced by Azor Corp., Newark, N. J. This Azor Flexiwound gasket, according to the manufacturer, combines to unusual degree great mechanical strength, high resistance to corrosion and extreme temperatures, proper compressibility with relatively light bolting, and unusual resilience. The fact that this resiliency is retained for long periods of use, along with the ruggedness of spiral wound construction, is said to give these gaskets remarkably long life. In many services, the manufacturer says, Flexiwound may be used a number of times with safety and substantial savings in gasket costs. They are general-purpose gaskets, recommended for use in all standard or special flanges, for boiler-tube caps, handholes and manholes.



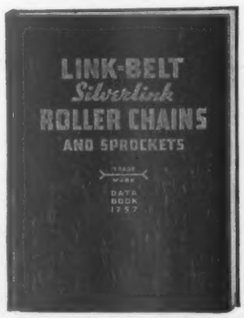
Duplex Slushpump for Drilling Incorporates New Features

A duplex slushpump for oil drilling operations designed for 350 pounds steam pressure, is one of the newest products of Wheland Co., of Chattanooga, Tenn., manufacturer of rotary drilling equipment. Incorporated in this pump, No. H-20,000, are improved features of design, supplemented by the use of high-grade materials of construction to withstand the heavy duty which, like most other drilling machinery, these pumps encounter in service.

Both the water-end and steam-end castings are made of a high-test nickel-alloy cast iron to assure strength, toughness and pressure-tightness, with a sound uniform structure. For the water-cylinder a composition including upwards of 1 per cent nickel, with .35 per cent molybdenum, is employed. The cradle sections are of the same material, which runs from 52,000 to 54,000 p.s.i. in tensile strength. The steam end is cast in a nickel-chromium iron with a minimum tensile strength of 40,000 p.s.i.

Link-Belt Issues Chain Data Book

Link-Belt Co., Indianapolis, Ind., has announced completion of a new data book, No. 1757, on its Silverlink roller chain and sprockets for drives and conveyor uses, a book of 174 pages of practical information, application pictures, and engineering information, including many new chains and features not hitherto published. The book covers Silverlink roller chains of manufacturers' (A.S.A.) standard sizes, non-standard sizes, and "heavy sizes." Included also are multiple-width roller drive chains, with ultimate strengths ranging up to 460,000 pounds. The "heavy sizes" have the same general appearance as the manufacturers' standard sizes, except for their thicker side-bars and their greater overall width. These heavy-size chains have been developed for extra-heavy work, such as that encountered on power-transmission jobs in oil-well drilling work. There is information about the twist-type chain, a Link-Belt engineering development covered by United States and Canadian patents, and not hitherto announced. This chain is provided with axial clearance to accommodate a normal degree of twisting action, and is said to have a wide application to chain-driven trucks, road-grading equipment, or wherever the service is likely to introduce unusual twisting stress. Notes, formulas and tabular data are given on how to select the proper combination of chain and wheels for an efficient drive.



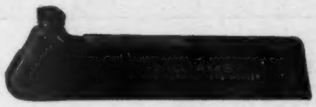
Every Length of J&L Pipe Now Is Subjected to Close Scrutiny

A new policy of 100 per cent inspection of each individual length of seamless casing, tubing, and drillpipe is now in force in the tube mills of Jones & Laughlin Steel Corp., Pittsburgh, Pa. In the past the company has subjected all oil-country products to exacting inspections to make certain that they have been well within A.P.I. specifications. Going beyond this practice, the all-inclusive inspection for all elements now involves examination of every length of pipe rolled for surface perfection, uniformity of wall thickness, trueness to round, trueness to size, straightness, and general quality.

Each threaded end of every pipe and coupling is inspected for taper, depth, pitch, and size to insure tight, dependable, leakproof make-up in the field. A special microscope thread comparator is used in the mill to maintain control of thread angle. Control of thread alignment on pipe and coupling by means of specially developed gauges, together with the straightness of the pipe itself enables the user to make up strings easily.

Williams Develops New Holder for Carbide Turning Tools

J. H. Williams & Co., 75 Spring Street, New York, has added a new carbide tool to its line of tool-holders. The new holder is made in straight-



shank and in right- and left-hand offset patterns in five sizes. The cutter is held parallel to the shank of the holder. With this arrangement the cutter can be ground so as to provide maximum support for the cutting edge.

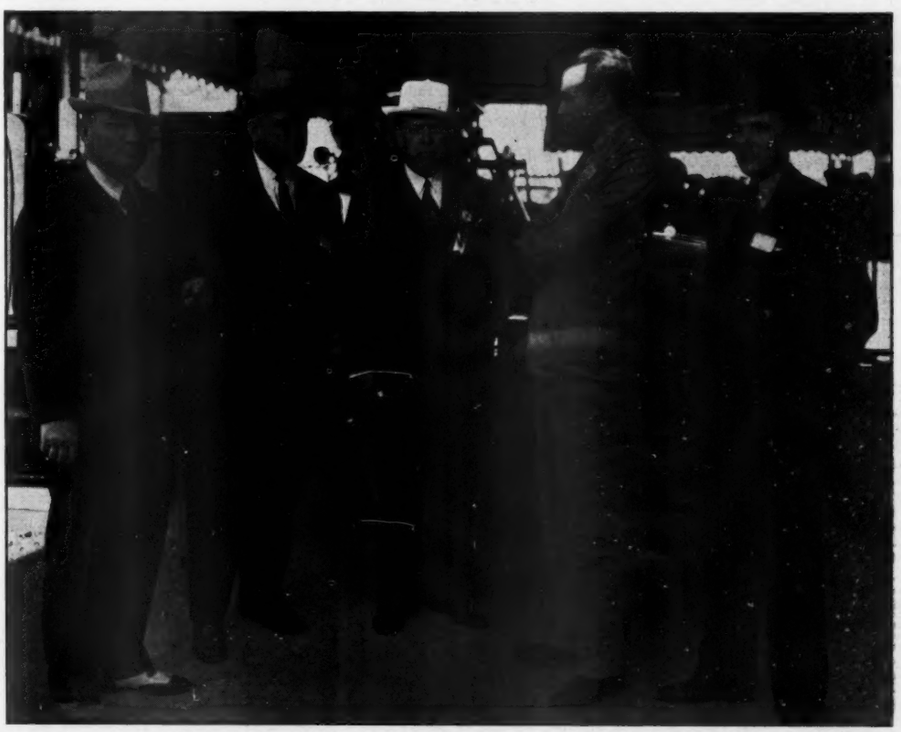
The holders are broached for either square or flat carbide cutters, but are supplied without cutters. They accommodate standard carbide cutters, which the user can obtain direct from leading cemented-carbide manufacturers in the correct size, shape, and grade for his needs. The holders, when equipped with regular high-speed steel bits, are adapted for use on planer or shaper.

Here and There With Men Who Manufacture Equipment

Wailes Dove-Hermiston Corp., New York, has appointed A. Y. McDonald Manufacturing Co., in Minneapolis, Minn.; Omaha, Neb.; Sioux City, Iowa, and Cheyenne, Wyo., as distributor of the Bitumastic line of industrial protective coatings.

Murphy Diesel Co., Ltd., has appointed W. C. Morgan district sales manager in the Southwest territory, with headquarters in Tulsa. The W.K. M. Co., Tulsa, is agent in the Mid-Continent field.

FIRST SALE AT EXPOSITION IS CATERPILLAR TRACTOR



The first sale of equipment at the grounds of the recent International Petroleum Exposition in Tulsa was made when Williams Bros. Corp., Tulsa, purchased a Caterpillar tractor, equipped with a bulldozer. In the accompanying photograph are shown, left to right: Bob Eldridge, vice president Oklahoma Tractor & Equipment Co., new manager of the Tulsa branch; S. M. Williams, president Williams Bros. Corp.; William G. Skelly, president of exposition; W. K. Cox, in charge of Caterpillar exhibit; Carl Renner, salesman Oklahoma Tractor & Equipment Co.

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NEW MEXICO Oil Leases for sale, Wholesale. Inquiries invited. Write, Box 507, Las Vegas, New Mexico.

ADVERTISER from New Mexico has well located New Mexico oil leases for sale, (mostly large blocks). Want to contact reliable brokers and dealers capable of selling large acreage. Will be in Philadelphia, Washington, Pittsburgh, St. Louis and Chicago during June. For interview or particulars address J. F. Freeman, Hotel New Yorker, New York City, after June the 15th.

HAVE SOLID block oil leases, in Massac County, Illinois, on structure. Sell or make drilling contract. Low rentals. J. N. Lawler, 601 S. Summit, Girard, Kansas.

New Mexico OIL LEASES WHOLESALE 40 acres at a time.
Roy G. Barton, Clovis, New Mexico.

LEASES—East Texas, La., South Ark. 20 acres up, dollar acre up. Owners—Address Attorney, Box 1122, Little Rock, Ark

DRILLING deal wanted. 40,000 A in So. Ill. in and around production area. Illinois Minerals Co., Cairo, Illinois.

LEASES—ROYALTY. Few small tracts around the Dobbs Oil Co.'s Ordovician Wildcat Eastland County block. Low price. E. CROFT, Proctor, Texas.

Leases and Drilling Blocks

Tex., La., Okla., Ark., Kas., N. Mex., producing and potential royalties, leases, drilling blocks, lands, bought-sold. American Investment Co., Houston.

I OWN 3,000 acres free in N. Pittsburg and Atoka Cos., Okla. 40 to 1000 A. tracts. No trades. Cash sale, lease or royalty, $5 to $25 per A. Townsite on 2 RRs. near production. J. E. Cavanagh, Baker, Ore.

OWNER of Section of land fourteen miles northeast of Macoun, Sackatchewan, on which there is believed to be oil and gas, wishes to lease or sell land to someone who will drill for gas and oil. Write to Mrs. Blanche Gilbraith, Geneseo, Ill.

BUY LAND—2½ acres, clear deed, for $50, $10 down, $5 month, in California's next prospective oil and gas field. Barth well drilling, down 2800 ft. Buy now. Bargain price. Kimbrough, 729 San Fernando Bldg., Los Angeles, California.

OUR lists will help you turn your oil or royalty deal. Oil Industry Mailing List Co., Tulsa Loan Bldg., Tulsa, Okla.

HAVE oil well with oil within few feet of top of casing. Want production test made and more wells drilled if test is satisfactory. L. E. Griffith, Townsend, Montana.

PROVEN offset lease in Oklahoma City field. Will sell $7,500 or consider drilling contract. R. Z. Glass, 1909 Commerce Street, Dallas, Texas.

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THE DOWSING METHOD for locating oil structures, faults, and treacherous areas, operates on the principal of vibratory response to emanations from petroliferous sub-strata. Our WATSON No. 2, pioneer well of the Wilmington, Calif., field was located by this method and all my personally owned production. 15 years experience. This physico method may solve all your structural difficulties. Geo. Miller, 1548 Post Ave., Torrance, Calif., Ph. 983.

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Business Opportunities

WISH to contact producer with 500 barrels production in Mid-Continent, available for small skimmer. Territory must have market possibilities. Address Box 935, Big Spring, Texas, giving complete information.

Manufacturer

Established Manufacturer of Oil Field Equipment with large plant and ten (10) stores in Mid-Continent and California Oil Fields desires to manufacture patented items for use in pipe line pumping, production pumping, or drilling service. Address Box J-403, The Oil and Gas Journal, Tulsa, Okla.

Situations Wanted

CHIEF Estimating Engineer employed by major oil company, graduate engineer, 39. Considerable practical large construction management background. Specialist coordinating construction operations with estimating department. Good reason for desiring change. Minimum starting salary $350.00 per month. Address Box J-402, The Oil and Gas Journal, Tulsa, Oklahoma.

Help Wanted

COMPILING production personnel lists and drilling contractors lists in Illinois, Michigan and Ohio. Address P. O. Box 2603, Tulsa, Oklahoma.

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Non-Producing Royalties, Permian Basin area, West Texas—Southeastern, N. M. Write for free booklet with maps. Everett M. Byers, White Bldg., Roswell, N. Mex.

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3 Lines	*$1.05*	*$1.80*	*$2.55*	*$3.30*	*7 Lines*	*$2.45*	*$4.20*	*$5.95*	*$7.70*
4 Lines	*1.40*	*2.40*	*3.40*	*4.40*	*8 Lines*	*2.80*	*4.80*	*6.80*	*8.80*
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Tulsa, Oklahoma